JUN 1 1944

PAPER TRADE JOURNAL

MAY 25, 1944

Established 1886

Memorial Day, 1944

"We pay silent and grateful tribute today to those gallant sons of America who have given their lives that the great principles of liberty and justice might endure."

GENERAL PERSHING

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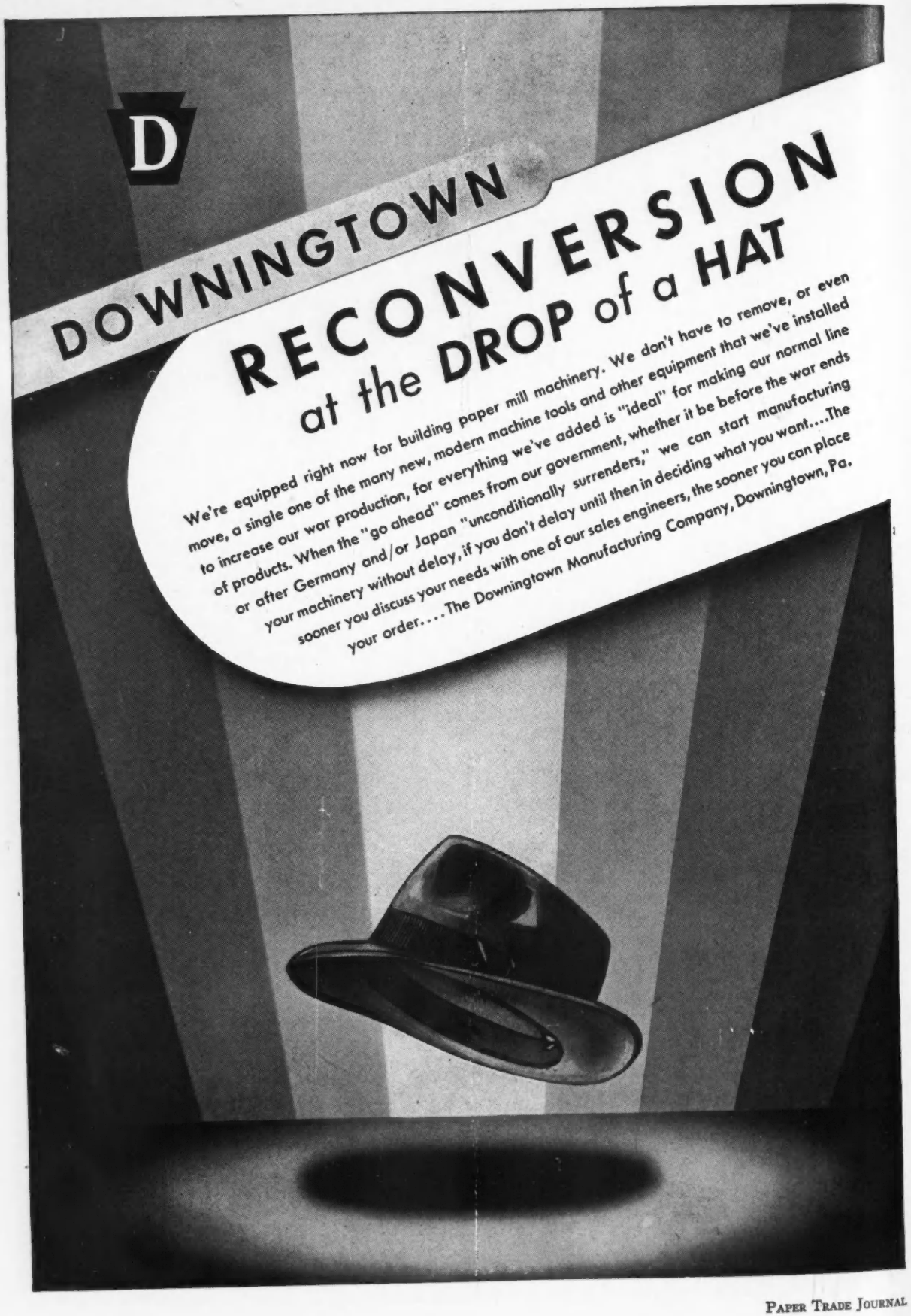
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PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.
Established 1872

Volume 118 Number 21

Published every Thursday by Lockwood Trade Journal Co., Inc.

Executive and Editorial Offices: 15 W. 47th St., New York 19, New York, U. S. A.

Tel. BRyant 9-0860 New York 19, N. Y.

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Western Representative:
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123 West Madison St., Chicago, Ill.

Subscriptions: (Payable in advance) By the year $4.00; Single Copy 10 cents.

Postage Extra: To Canada $2.00; To Other Foreign Countries $3.50.

Member Audit Bureau of Circulations

PAPER *established Feb. 17, 1899, combined with* PAPER TRADE JOURNAL *Nov. 16, 1899.* PAPER *established Sept. 21, 1910, combined with* PAPER TRADE JOURNAL, *Feb. 19, 1925.* *All rights to the above titles reserved.*

PAPER TRADE JOURNAL *is entered as Second Class matter at the Post Office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. Publication Office of Lockwood Trade Journal Co., Inc., 34 N. Crystal St., East Stroudsburg, Pa. Printed in U. S. A.*

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Vol. 118, No. 21

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

May 25, 1944

Approves Alcohol Plant to Use Wood Waste

WPB Gives Go Ahead Signal To $2,247,000 Project of Willamette Valley Wood Chemical Co. Near Eugene, Ore., To Produce Industrial Alcohol By Hydrolysis of Wood Wastes—Starts Next Spring.

WASHINGTON, D. C., May 24, 1944—War Production Board approval of the $2,247,000 project of the Willamette Valley Wood Chemical Company for a plant near Eugene, Oregon, to produce industrial alcohol by the hydrolysis of wood wastes was announced today by Donald M. Nelson, WPB chairman.

Valued As Exploratory Project

Mr. Nelson said the plant had been approved on the basis of its exploratory value. Successful development of a method for large-scale industrial alcohol production from wood wastes, he said, would represent a form of national insurance against any future raw materials shortages. Feed and food grains, sugars from the sub-tropics, and petroleum form the basis of the Nation's record 611,000,000 gallon alcohol program.

The WPB chairman said that the Oregon plant presumably could not be brought into operation before the spring of next year and therefore could not make any immediate contribution to the war effort. It was for this reason, in conformity with the policy of the War Production Board, that the project was denied approval by WPB's Requirements Committee some time ago. Furthermore, the new plant's capacity, of 4,100,000 gallons per year, will not of itself have any great significance in the 1945 alcohol program. Its value will lie chiefly in establishing the practicability and efficient design of additional plants, the WPB chairman said.

Large Supplies of Wood Waste

Suitable wood waste supplies appear to be such that over 100,000,000 gallons of annual alcohol capacity could be predicated upon this type of operation if it becomes necessary to give up the use of grain because of its need as food, Mr. Nelson said. But it is unlikely that any large production from a number of plants operating on this process could be available before 1946. The Willamette Valley project is therefore, purely an exploratory operation on a new non-food raw material.

The process to be employed is generally similar to the Scholler process which has been successfully used in Germany. But the proposed plant will differ rather markedly from German practices because of different raw materials and essential differences in design to meet American conditions.

In order to adapt the German process to American conditions, the Office of Production Research and Development of the War Production Board initiated a program of pilot plant experiments in January, 1943. The experiments were carried out at Marquette, Wis., during that year and the results were incorporated in the plant design which has been employed in the Willamette Valley project.

Urge Mechanization in Woods

WASHINGTON, D. C., May 24, 1944—Because of the present critical woods labor situation in the pulpwood industry, the Pulpwood Production Branch is urging all pulp manufacturers to mechanize their woods operations wherever possible so that woods labor will be utilized to maximum productive capacity, James L. Madden, of War Production Board Deputy Director in charge of pulpwood production, said today.

Mechanical equipment is critical and in order that the Pulpwood Production Branch may endeavor to take care of industry requirements for such mechanized woods equipment for the next five months, it is necessary that applications be filed immediately for needed equipment, Mr. Madden said. Mechanical equipment for pulpwood production is not a "shelf" item that can be stored; woods crews must be properly organized and supervised in order that the use of critical machinery will be fully effective, he added.

In order to receive mechanical equipment when needed, WPB authorization to purchase and place orders for such equipment must be obtained in advance. However, as there is a shortage of mechanical equipment, applications for authorization to purchase should represent the absolute minimum equipment necessary for securing maximum utilization of woods labor to maintain capacity pulpwood production, Mr. Madden said.

WPB Form 3131 should be used, in accordance with Order L-311, for filing applications with WPB for authority to purchase mechanical power saws (circular type and chain saws), mechanical loaders and hydraulic and mechanical drum debarking equipment.

WPB Form 1319, which is available at all WPB field offices, should be used in accordance with Orders L-53 and L-257, Direction 2, for authority to purchase wheel type tractors (with attachments for industrial use) and track-laying tractors.

For detailed information relative to procedure in obtaining other items of equipment, local WPB field offices or the Pulpwood Production Branch, Paper Division, War Production Board, Washington, D. C., should be consulted.

D. C. Everest Announces Important Patents

Inventions In Research Department of Marathon Paper Mills Develop New Types of Food Packaging Materials—New Defibering Process Announced — Dr. Pusey Elected By Lawrence College.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., May 22, 1944 — An important series of patents, resulting from work in the company's research department, has been announced by D. C. Everest, president of the Marathon Paper Mills Company, Rothschild, Wis. The patents have been assigned to the company.

The inventions relate to food packaging materials and include a new type of cheese wrapper, heat-sealable package labels, self-sealing laminated packaging papers and a new thermoplastic, heat sealable composition. These materials are of interest to America's food industries for use in manufacture of bags, cartons, wrappers and other protective packaging for foods.

The inventions were developed in Marathon's research department to replace critical war materials. Prior to Pearl Harbor the company used large quantities of rubber to produce its patented Parafilm products for food packaging. Officials of the company voluntarily turned over the company's stockpile of pure rubber to the government for direct military use at the outbreak of the war. Marathon research chemists then turned to an intensive research program and developed a series of alternative materials which require no critical materials and which are recognized by the recently granted patents.

Allen Abrams, Marathon technical director, points out that the company's policy of providing extensive research facilities has resulted in considerable benefit to the public and to the food industries which are so vital to the war effort. The results of research have made it possible to maintain the company's food package production despite shortages of critical materials.

The Wisconsin cheese industry is a direct beneficiary of this work because Marathon's work has made it possible to package millions of pounds of cheese annually, at the same time releasing over 2,000 tons of tin foil annually. The research has also developed many new war packages and wrappers for safe protection of overseas food shipments.

A discovery which the inventor, U. S. McMillan, Marinette, Wis., claims will greatly relieve the acute paper and pulp shortage, was announced last week. The new process is said to make pulp from forest waste, utilizing all of the tree except the bark, twigs and leaves, and making available many species of wood hitherto not used for pulp manufacture.

Its base is in the preparation of the wood. Mr. McMillan calls it a defiberizing process which literally cards the raw fiber from the green log, and this yielding instantly to chemical treatment to dissolve the organic matter, leaving the cellulose. The raw fiber as prepared by his process does not have to be cooked under steam pressure, but the same cooking reagents are used as in cooking the chipped wood.

Beside the mechanical preparation, the outstanding economical feature, Mr. McMillan said, is in the time required for dissolving the so-called lignin, which is the oxidized compound of the organic substance which transforms during the drying-out period into what is known as lignin. Under the McMillan process, the dissolving takes place while the organic matter is soft and his cellulose yield is higher per cord of wood, he declares. His defiberizing process does not break up or otherwise destroy the fibers as they grow in the tree, thus preserving their natural integrity.

Mr. McMillan is the inventor of Fibercrete, which has been thoroughly tested by the Marinette Marine Corporation, Marinette.

Lawrence College Elects Dr. Pusey President

Announcement was made Saturday, May 20, of the election of Dr. Nathan Marsh Pusey, 37, as president of Lawrence College, Appleton, Wis. He succeeds Dr. Thomas N. Barrows, who resigned last November because of ill health. Dr. Pusey was a sophomore tutor at Lawrence from 1935 to 1938, and presently is a member of the faculty of Wesleyan University in Connecticut. He is the tenth president of the college, which was established in 1848. The Institute of Paper Chemistry is an affiliate of Lawrence College.

Favors Greater Tree Planting Program

An immense postwar tree planting program "to replace the forest capital which we are now expending in the war effort" is one of the newly announced objectives of the Wisconsin Conservation League.

A new 14-point program has just been published. It puts major emphasis on forestry and anti-water pollution points in the League's objectives.

Heads Kimberly-Clark Engineers' Club

Vern Hansen was elected president of the Kimberly-Clark Engineers' club at a dinner meeting in Hotel Menasha, Menasha, Wis., Wednesday evening, May 17. Richard Nelson was named vice-president; William Lundy, secretary; and Robert Eiss, treasurer. About 50 men attended the meeting, the last until next September.

Mill Men At Safety Dinner Meeting

An exhibit of personal protective equipment featured a talk by L. W. Schafer, Pittsburgh, Pa., at a dinner meeting on safety sponsored by the Twin City Safety Council Wednesday evening, May 17, at the Valley Inn, Neenah. Twenty-eight foremen and supervisors were present.

Mr. Schafer said that there are more than 3,000 personal protective equipment items available, but that it was not until after 1914 that such equipment was made extensively in this country. Most of it came from England and Germany.

Mr. Schafer is connected with the Mines Safety Appliances Company in Pittsburgh.

Forelady At Badger-Globe Mill Honored

Miss Myrtle Muenster, forelady at the Badger-Globe mill of the Kimberly-Clark Corporation, Neenah, was honored at a dinner party last Thursday evening at Hotel Menasha, Menasha, Wis., in recognition of 20 years of service in Kimberly-Clark.

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Midwest Views Future With Grave Concern

Kraft Paper and Board Scarcity Most Serious Now—Inequities In Price Ceilings Viewed As Trade Deterrent—Salesmen Plan Ahead —Coming Paper Association Meetings—Other Late Market News.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., May 22, 1944—The chaotic conditions in the Chicago paper market are expected to result in a "dismal" third quarter with prospects for the remainder of the year none too bright according to reports current in this territory. The terrific drive by government agencies to insure sufficient packaging and wrapping at this criticacl time is reported to have created grave shortages in other lines where writing paper mills, for example, have been asked to make a specific quantity of wrapping paper to spread the load.

Kraft and board markets are reported in the most critical situation to date and the shortage of pulp here is expected to last either for the duration or until such time as the manpower situation is drastically changed for the better. There are complaints, as well, over the general price situation where the inequities in ceilings are not only having a detrimental effect on operations but on the waste paper salvage situation as well. Waste paper collections in Chicago continued to be surprisingly good but there remains the conviction that the professional collections would be bettered with proper ceiling adjustments.

Paper Industry Serves Chicago

The Chicago Association of Commerce this week made public its 1944 Committee Directory listing business and civic leaders who are giving service to this organization. The paper trade locally is represented on the Board of Directors by Walter P. Paepcke, president of the Container Corporation of America. The Box Board Products division is headed by Edward P. Lannan, Central Fibre Products Company. Other members are H. C. Baumgartner, Container Corporation of America and committee vice chairman; J. P. Brunt, Brunt & Company; A. C. Fessenden, Ace Carton Corporation; and George J. Kroeck of the Kroeck Paper Box Company.

George A. Dean, Horders, Inc., is chairman of the Office Appliances and Stationers division while other members are A. G. Shennan, International Tag & Salesbook Company; Russell P. Carpenter, Sanfod Ink Co., F. P. Seymour, Horders and P. L. Tallman, Tallman, Robbins & Company.

The Paper and Envelope Division is headed by John D. Swigart of the Swigart Paper Company, who has long given yeoman service on community chest drives and other civic activities. Committee members working with Mr. Swigart are Paul Butler, Butler Company; O. D. Bast, H. Worcester Company; Arthur U. Claghorn, Pioneer Paper Stock Company; J. Owen Lee, Great Lakes Paper Company; S. L. Schwartz, Schwartz Paper Company; and Harry A. Swigert, Jr., Neostyle, Inc.

Adds New Aristocrat Line

The General Engraving Company, Chicago, has developed a division of its activity known as the Aristocrat Paper Company. A line of boxed papeteries is being developed under the direction of Harry Cohn, chairman of the board of General Engraving and president of the Aristocrat Paper Company. The company has already announced interesting papeterie cover designs from the sketches of famous artists and is stressing lines of Aristocrat Bond, Fantasy and Gentlemen's bond.

Salesmen Plan Ahead

The western division of the Salesmens Association of the Paper Industry held a round table business discussion at its regular Monday noon, May 15 meeting at the Hotel Sherman. While most of the time was taken up with the ever tightening situation in the paper industry, the SAPEYES did hear a bit about plans for added speaking attractions during at least two of the summer months and further discussed recreational sides of the program for the summer season.

National Paper Box Assn. Meets

The meeting of the National Paper Box Manufacturers Association to be held at the Drake Hotel, Chicago, on May 21 and 24, is expected to be one of the largest and most successful yet held. It will be the twenty-sixth of the annual meetings of this Association and seems to be the most interesting because of the critical situation in the paper box industry. Most of the discussions will be handled by representatives of the Government including the War Labor Board, War Manpower Commission, Office of Price Administration and the Ordnance section.

Coming Meetings Create Interest

Edgewater Beach Hotel reports indicate that the American Pulp and Paper Mill Superintendents Association will have an unusually fine attendance for its silver anniversary convention to be held in this city next week, May 24 to 26 inclusive. Availability of pulp, new developments in production, shortages of chemicals, manpower problems and prospects for the reconversion and post war period are all slated for major discussion during the three day session. It is expected that members of the Chicago Professional Paper Group, most recently formed and rapidly growing member of the paper and allied trade associations, will be well represented during the conference.

Envelope Association Meets June 1

Chicago will be the site of another important annual meeting on June 1 and 2 when the Envelope Manufacturers Association holds its yearly sessions also at the Edgewater Beach Hotel. According to R. R. Bliss, executive secretary of the organization, Harry F. Affelder of the Wolf Envelope Company of Cleveland and president of the Association, will preside over a meeting which will reflect efforts to arrive at a solution to the many problems confronting envelope manufacturers. J. E. Pringle of the Brown Paper Goods Company, Chicago, is one of the committee of four which is preparing the business and social program. Government representatives, including officials of the Office of Price Administration, War Production Board and War Manpower Commission are expected to be speakers.

You, as a maker of quality paper, know that there is no substitute for cotton. You can just as well work with virgin fiber in original form from the cotton boll.

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Paper Institute Holds Annual Conference

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., May 22, 1944—About 200 executives of member mills of the Institute of Paper Chemistry, Appleton, Wis., attended the annual conference Thursday and Friday, May 18 and 19. Among the speakers were President Ernst Mahler, Neenah, Wis., vice president of Kimberly-Clark Corporation, who addressed the banquet Thursday evening at North Shore Golf Club; John Strange, secretary-treasurer of the Institute; Dr. Harry F. Lewis, dean, and Dr. J. E. Todd, assistant dean.

Representing the Various Mills

The conference ended Friday, but some executives remained over Saturday to discuss their specific problems. Representing the various mills were:

Bergstrom Paper Company, N. H. Bergstrom and Burt B. Fisher; Beveridge Paper Company, Doyle Bogges; Bird and Son, Inc., C. W. Conrad and Ralph Wilkins; Brown Company, Frederic G. Coburn, E. E. Morris, W. B. Beckler, D. H. McMurtrie and Milton Schur; Champion-International Company, Norman Bearse; Champion Paper and Fibre Company, Harold Murdock and Herbert Randall; Riverside Paper Corporation, C. B. Clark, E. C. Hilfert, E. F. Davis and H. L. Lake; Combined Locks Paper Company, G. D. Muggleton, L. J. Smith and M. C. Killiam; Consolidated Water Power and Paper Company, G. K. Dickerman, Henry P. Baldwin, L. E. Smith and A. Phillips; Crane and Company, Inc., Bruce Crane, E. O. Reed and Francis L. Simons; Detroit Sulphite Pulp and Paper Company, George N. Carleton and R. L. Davis; Eastman Kodak Company, Kenneth Huse and Milton F. Fillius.

Ecusta Paper Corporation, Harry H. Straus, Dr. Ward Harrison and Dr. Earl Bryant; Fitchburg Paper Company, Walter H. Hoffman; Fox River Corporation, W. M. Roberts; Robert Gair Company, E. K. Mansfield and P. S. Bolton; Gilbert Paper Company, A. C. Gilbert, George Gilbert and A. C. Haselow; Glassine Paper Company, Robert F. Nelson and M. Connor; Hammermill Paper Company, R. P. Price; Hobert Paper Mills, John Weidner; Hummell and Downing Company, W. L. Cassiday; International Paper Company, A. G. Stone, Maurice Reuben, Stuart E. Kay and Vance P. Edwardes; Johns-Manville Corporation, C. F. Rassweiler and G. B. Brown; Kimberly-Clark Corporation, C. G. Parker, S. F. Shattuck, C. H. Sage, J. R. Kimberly, J. F. Hunt, W. W. Cross, A. R. Ellis, J. R. Fanslow, C. A. Fourness, C. F. Jenkins, William Kellett, Fred Kranhold, R. W. Lyons, R. K. Neller, R. G. Boon, C. W. Nelson, H. A. Rothchild, R. B. Sawtell, Fred Seaborne, J. L. Sensenbrenner, A. Sharpe, J. C. Simonich, L. Stedman, W. H. Swanson, T. D. Ward, A. G. Wakeman, R. M. Watt, J. T. Whelan, W. M. Wright and F. J. Sensenbrenner.

The Lehon Company, Frank Woodside and T. Lehon; Marathon Paper Mills Company, George Brabender; Menasha Products Company, Ruy Sund, W. H. Graebner, Leo Croy and F. L. Broeren; Mead Corporation, J. O. Mason and R. H. Savage; Miamisburg Paper Company, H. A. Brawn; Michigan Paper Company, Dwight L. Stocker; Minnesota and Ontario Paper Company, R. W. Andrews, G. Stevens and Dr. Boris M. Stanfield; Mosiness Paper Mill Company, N. H. Stone, H. C. Crandall and C. M. Green.

Lee Paper Company, Maxwell Bardeen; Neenah Paper Company, D. K. Brown, I. J. Stafford, Kimberly Stuart, S. I. Kukolich and Leo O. Schubart; Northern Paper Mills, A. B. Hansen and R. H. Purdy; Northwest Paper Company, C. I. McNair, Jr., E. P. Dupont and R. E. Noreus; Oxford Paper Company, Charles A. Gordon; Rhinelander Paper Company, Folke Becker; Riegel Paper Corporation; John L. Riegel; Scott Paper Company, C. M. Howell, Paul C. Baldwin and Ralph J. Knoll; Smith Paper, Inc., A. M. Gair, E. A. Richardson, H. M. Keating; John Strange Paper Company, Hugh Strange and J. H. Levandoski; Thilmany Pulp and Paper Company, Karl E. Stansbury, Elmer Jennings, C. R. Seaborne, G. E. McCorison and E. R. Sutherland; Tomahawk Kraft Paper Company, S. B. Rugge, C. G. McLaren and J. H. Cowhill; Union Bag and Paper Corporation, H. P. Carruth, A. Calder, L. J. Doyle, G. W. E. Nicholson and John B. Calkin.

Watervliet Paper Company, Elbert G. Milham; Byron Weston Company, Hale Holden, Jr., and Walter G. Hendrich; West Virginia Pulp and Paper Company, George B. Hughey and F. G. Rawling; Weyerhaeuser Timber Company, Harold Bialkowski; Whiting-Plover Paper Company, L. A. Moss and Robert Elias; Technical Association of the Pulp and Paper Industry, R. G. MacDonald; American Paper and Pulp Association, E. W. Tinker; Sulphite Paper Manufacturers' Association, Morris Dobrow; Valley Paper Company, Victor A. Hanson; Appleton Machine Company, Henry Madsen; Appleton Wire Works, W. E. Buchanan; George Banta Publishing Company, George Banta and R. E. Thickens; Appleton Woolen Mills, A. H. Wickesberg and Allan Thuerer.

Ontario Exports Less Pulpwood

TORONTO, Ont., May 20, 1944—According to figures given in the House of Parliament recently in reply to a question, Ontario exported less pulpwood to the United States in 1943 than in 1942 and is likely to export less during 1944 than either of these two years.

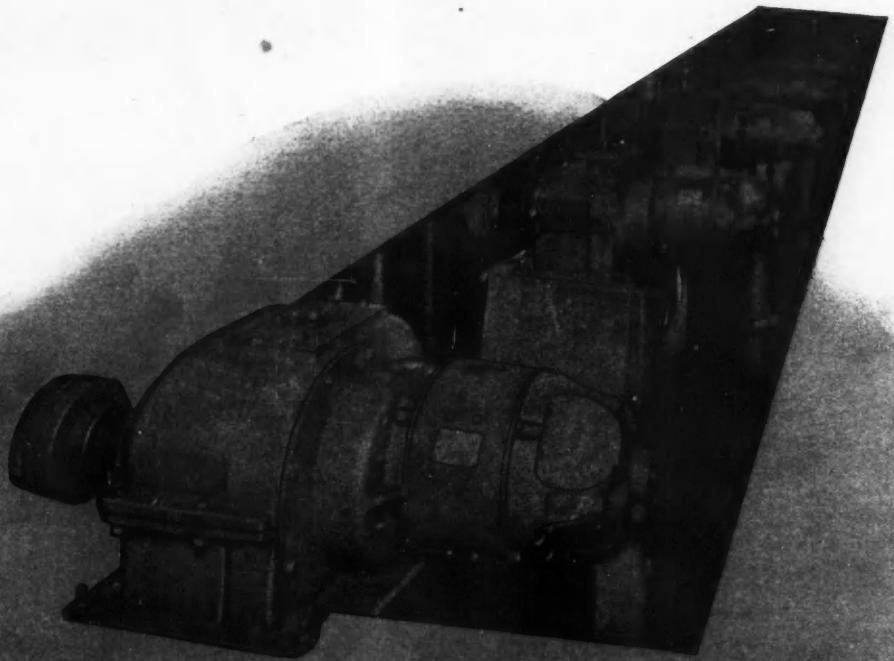
In 1942 Ontario exported 917,305 rough cords of pulpwood to the U. S., while in 1943 the figures were only 654,436 rough cords. Parliamentary Assistant Chevrier said that if the present trend continues 1944 will also be far behind 1942.

No information was available on prices paid for the wood, Mr. Chevrier said, but prices paid by U. S. customers are not covered by Canadian price ceiling regulations. They are the result of negotiations between the Ontario exporter and the American buyer.

E. R. Southouse Joins Elie de Vries

E. R. Southouse who resigned on April 18 from Parsons & Whittemore, Inc., has become associated with Eli de Vries who also recently resigned his connection with the same concern.

Mr. Southouse, who was formerly vice-president of Parsons & Whittemore is now located with Mr. de Vries with offices at 220 East 42nd street, New York. Telephone Murray Hill 2-9137.



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as much as $1.20 PER TON of board

A substantial part of paperboard cost lies in the cost of felt. But when felt has to act as a belt to drive auxiliary rolls, water removal and formation qualities have to be sacrificed to give the felt mechanical strength. The result is a compromise felt design with shorter life. Shutdowns for replacement are frequent, water removal is less and sheet formation is improper. Yet, all of these disadvantages can be eliminated.

With the Westinghouse wet-end auxiliary drive, the felt is relieved of loads and the conditions at the roll nips are ideal for proper sheet formation. Felt life is longer and paper quality is better.

Furthermore, water removal cost is less. The water removal ability of felt goes up as its mechanical strength goes down. With wet-end drives, better felt can be used since mechanical strength is no longer a factor. You save because it costs from 8 to 14 times more to remove water at the driers than at the wet end. Users claim as much as $1.20 per ton of board saved with this drive.

Complete information about this improved drive is contained in a new booklet just published. Write today for your copy of B-3275. Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., Dept. 7-N. J-94606

GET THIS BOOK—

Tells How You Can . . .

- Increase Felt Life
- Improve Paper Quality
- Lower Production Costs
- Increase Water Removal
- Get Better Formation
- Reduce Shutdowns
- Increase Production

Westinghouse

PLANTS IN 25 CITIES... OFFICES EVERYWHERE

Wet End

AUXILIARY MOTOR DRIVES

To Be Technical Sales Director

The Glyco Products Company, Inc., Brooklyn, N. Y., through its vice president, E. Rosendahl, announces the appointment of Dr. Eugene McCauliff as technical sales director of the company. Dr. McCauliff is a graduate of Fordham University where he received his Ph.D. in organic chemistry in 1931.

Dr. McCauliff has recently been engaged in consulting and advisory activities for the chemical industry, in which capacity he initiated many process developments and designed chemical pilot plant and production installations. A great deal of his efforts were employed as technical director of sales for the Duff Chemical Company of New York City. Before this he was associated for some time with the Industrial Synthetics Corporation, prior to which he was attached to the Sales Department of the Hooker Electrochemical Company for many years, particularly assisting in the sales development of fine chemicals.

In his new position, Dr. McCauliff will devote his time to the technical sales development of the esters, synthetic waxes, emulsifying agents, etc., manufactured by Glyco.

Pulp Trading Co. Elects Officers

At a meeting of the directors of the Pulp and Paper Trading Company held May 18, Morris Gintzler was elected president and treasurer; O. Frederick Swanson, vice-president in charge of the Pulp Division; Frank E. Forsbrey, vice-president in charge of the Paper Division; Jordan S. Tucker, secretary and assistant treasurer; Joseph L. Fox, assistant vice-president and assistant secretary.

Morris Gintzler, president and treasurer, has been associated with the concern since its organization in various capacities. His success is attributed to his many fine qualities, which has enabled him to make and retain a large number of friends in the paper and wood pulp fields. He is a member of the board of directors of several paper and pulp manufacturing concerns and is an executive of J. Andersen & Co. of which he is part owner.

O. Frederick Swanson, vice-president of the company and long connected with the concern, was previously engaged in the manufacture of paper and pulp in the east and in the middle west. He comes from a long line of paper and pulp men. He served for several years on the board of governors of The Paper Club of New York. He is general manager of J. Andersen & Co. and widely known in the paper and pulp industry.

He has written an annual review of the wood pulp industry for the PAPER TRADE JOURNAL for the last twenty-six years.

Frank E. Forsbrey, vice-president in charge of paper, began his connection with the concern in 1917 as a salesman in the paper department. Previously he has been purchasing agent of the Robert Gair Company, New York.

Jordan S. Tucker, secretary and assistant treasurer, formerly a public accountant, has been with the concern for 27 years as assistant treasurer.

Joseph L. Fox, assistant vice-president and assistant secretary, has been connected with the concern for 30 years. As a salesman in both the paper and wood pulp departments, he has a large acquaintance in the trade.

FRANK E. FORSBREY

MORRIS GINTZLER

O. FREDERICK SWANSON

Warren Steam Pump Changes at Boston

Announcement is made by Warren Steam Pump Company, Inc., Warren, Mass., of the following changes in the Boston office, 75 Federal street, as of June 1, 1944:

The present Boston manager, Howard C. Fiske, dean among New England pumping machinery men and forty-five years with the company, will retire from that post but remain as director, an office held by him since 1926. It may also be noted that his father before him, Wilbur Davis Fiske, was without

PARKMAN A. COLLINS

HAROLD FOX

doubt one of the leading pump men to ever serve the Boston area. Incidentally, Howard Fiske is entirely in accord with the viewpoint that Boston is the Hub of the Universe. Although born in Brooklyn, N. Y., he came to Boston at an early age.

Parkman A. Collins, associated with Mr. Fiske for the past twenty years, becomes Boston manager. Mr. Collins is a graduate of the University of Maine, 1917, and served with the Air Service in World War I with a Lieutenant's rating. His first business connection was with New York Belting and Packing Co., for whom he traveled for six years, at the end of which period, in 1925, he joined the Warren Steam Pump Company. As Application Engineer on pumping Machinery, Mr. Collins has covered Eastern Massachusetts, Maine, Vermont and New Hampshire. His experience covers a wide variety of industries, among the most important of which is Pulp and Paper Mills. He has specialized in this field and has been responsible for many successful pump installations throughout the territory. Aggressive yet modest, he gives credit to the loyalty of his host of friends and customers for his present advancement rather than his own efforts and ability.

A new addition to the Boston office personnel is Harold Fox, who has been with General Electric Company since 1927 and for many years New England District specialist on pumping applications and oil refineries.

Mr. Fox graduated from Massachusetts Institute of Technology, B.S. in 1926 and M.S. in 1927. He next completed General Electric's Student Engineering Course at Schenectady and Lynn, Motor Design Division and in 1930 worked out of their Worcester office as a motor specialist. The next year he was transferred to Boston where he has remained as New England District specialist on pumping applications and oil refinery specialist. Mr. Fox is a member of New England Waterworks Association. He will act in the capacity of application engineer in his new position.

Organized for Fifth War Loan

William E. Cotter, director of the Commerce and Industry Division of the War Finance Committee for New York announces that over 275 of New York City's key industries have rolled up their sleeves for a powerhouse drive on the 30,000 business houses and corporations in the city from which the U. S. Treasury must receive more than $3,000,000,000 during the Fifth War Loan, starting June 12th. Over 3,000 committeemen are all set to make the contacts necessary to secure the maximum in War Bond corporate subscriptions and individual sales to business executives.

As Mr. Cotter pointed out, there is a great deal more at stake this time than just reaching a national goal of $16,000,000,000. The Fifth War Loan is really a "Fighting Fifth Loan," and our overwhelming support of it will provide a great moral force behind our fighting men during the most critical period in the history of our country.

The campaign will be launched with a Commerce and Industry Fifth War Loan Dinner, to be held at the Hotel Commodore, 42nd street and Lexington avenue, at 7:30 P. M., on Monday, June 12. A noteworthy program has been arranged, and it is anticipated that all business groups in New York City will be represented. Provision has been made for 1200 guests. The principal speakers will be Lt. Gen. A. A. Vandergrift, of the U. S. Marine Corps, leader in the conquest of Guadalcanal, and Major Allen V. Martini, of the U. S. Air Force, credited with shooting down 22 Nazi planes in a single battle.

Dedicate Mosinee School Forest

The Mosinee, Wis., school forest in the town of Mosinee was dedicated May 4, with Fred Trenck, Madison, forester for the Wisconsin College of Agriculture; Wakelin McNeel, Madison, assistant state 4-H leader, and Norman S. Stone, Mosinee, secretary and general manager of the Mosinee Paper Mills Company, taking a prominent part. Because of inclement weather, the event was held in the school gymnasium. About 20,000 trees from the state nursery at Wisconsin Rapids, Wis., were planted on the school forest tract, which was donated to the school for this use by the Mosinee Paper Mills Company.

M. N. Taylor, Rhinelander, Wis., executive director of Trees for Tomorrow, Inc., announced May 16 that the organization would send 1,000 three-year-old spruce trees for transplanting along trout streams to any fish and game club in northern Wisconsin. The clubs, to be eligible, must establish a depot in the area where the trees are to be distributed.

Ruhling On Lily-Tulip Board

F. E. Ruhling, vice president in charge of the Chicago and surrounding sales division of the Lily-Tulip Cup Corporation, has been elected a member of its board of directors. The new board member has been identified with his present capacity since 1929 and prior to that time was head of the Ideal Cup Corporation which made paper cups and allied lines. He is one of the veteran sales executives in the Chicago area, his experience dating back to the turn of the century.

1st Lt. Donald Walker Now in Europe

Lt. Donald Walker, associated with the export department of Walker Goulard Plehn is now overseas in the European area. Lt. Walker is a graduate of the University of Pennsylvania (Wharton School) and enlisted in the regular Army in August, 1941 for foreign service and was sent to Panama in October two months before Pearl Harbor. A month after he arrived in Panama he was transferred to the Finance Department and worked himself up to the position of

1st Lt. Donald Walker

Master Sgt. An opportunity was given him to take officers training last July and he finally completed his course at Camp Plouche, New Orleans and graduated as Second Lt. in the Transportation Corp. on November 1.

Nevillacs with Improved Odor

Nevillac OA, a new liquid resin of improved odor has been introduced by the Neville Company, Pittsburgh, Pa., as the first of a series of improved grades which are being developed to enlarge the Nevillac Resins group.

Nevillac OA is similar to Nevillac 10° (PHO) differing chiefly in improved odor and superior color retention, and slightly in several other characteristics. These include lower specific gravity and consequently somewhat lesser weight, and less viscosity.

Fields of use of the new Nevillac will include adhesives of the waterproof, optical, shoe, packaging and pressure sensitive types; paper coatings both waterproof and greaseproof and for ordnance wrap; paints and varnishes including laminating varnishes; artificial leather and leather finishes; raincoats; printing and duplicating inks; and possibilities for generally broadened applications due to its improved characteristics.

The new product is soluble in almost all organic liquids (except water and glycols) including alcohol, hydrocarbons, ketones, esters, ethers and chlorinated hydrocarbons. It is completely compatible with most synthetic resins including cellulose esters and ethers, vinyl acetate, vinyl butyral, zein, coumarone-indene resins, GR-S rubber, Hycar rubber, and partly compatible with polyvinylchloride and vinyl acetate and chloride copolymer.

$2,500,000 for Paper Mill Machinery

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 24, 1944—Authorizations to purchase materials for the construction of pulp and paper mill machinery costing approximately $2,500,000 have been approved by the Paper and Paperboard Divisions of the War Production Board in the second quarter of 1944, Allen Hyer, chief of the Distribution Section for Paper and Paperboard, said today.

These authorizations will probably increase during the remainder of the quarterly period and approach the total allotment of $2,898,000 set aside for the production of mill machinery, he told members of the Pulp and Paper Machinery Advisory Committee at a recent meeting. At the same time, he added, approximately as many requests were denied as were granted in the second quarter because the equipment proposed was not considered important in manufacturing paper products for military and other essential requirements.

Mr. Hyer explained that the aim of the WPB Paper and Paperboard Divisions was to expedite delivery of materials and equipment to mills producing essential paper and paperboard products. Mills in need of equipment should file their applications promptly, and describe clearly and in detail the value thereof in improving production. In reference to material estimates for the third quarter, he pointed out the necessity of having all available requirements from machinery builders as soon as possible. Present indications are that about 1,600 tons of carbon steel, 200 tons of alloys and 350 tons of copper will be requested of the WPB Requirements Committee. It was his belief, he said, that WPB would be able to meet the demands of mills for necessary materials and machinery, but he explained that it was necessary to keep over-all supplies fairly liquid so as to be able to meet any emergency requests.

Boston Bagging Prices Lower

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., May 22, 1944—Prices of some grades of bagging have declined. Domestic gunny bagging is now at 2.75 per hundred weight, compared with a previous quotation of 3.25; mixed rope has gone down to 1.55 from 2.00; domestic scrap burlap to 2.50 from 3.50, Australian wool pouches to 3.25 from a range of 3.75 to 4.00. Waste paper and rags are in good demand.

Fire Damages Waste Paper at Boston

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., May 22, 1944—A large volume of bales of paper, some virgin stock and some salvaged, owned by the Great Eastern Packing and Paper Stock Corporation and by the Graham Corporation, was destroyed by a 5-alarm fire at the Al Burkhardt Storage Warehouse Company building, Roxbury, May 19. Fire inspectors were investigating the cause of the $100,000 fire, which destroyed also rope and wool.

Morey Co. Incorporates

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., May 22, 1944—The Morey Paper Mill Supply Company, 309 South street, Fitchburg, Mass., paper mill supplies sales, has been incorporated with capital stock of $100,000, consisting of 1000 shares of $100 each. Edward H. Hall, of the same address, is president and treasurer, and Virginia C. Hall and Walter H. Pierce, clerks.

Senators Allege Unfair Allocations

WASHINGTON, D. C., May 23, 1944—The Truman Defense Investigating Committee of the Senate today brought forth evidence which members held to show that the Printing and Publishing Division of the War Production Board has shown partiality in allocating additional newsprint supplies to magazine and book publishers.

Members of the committee said that the purpose of the inquiry, which will continue tomorrow, is to force WPB to adopt more definite rules to cover such additional allocations and to furnish reasons to applicants why their requests are either granted in full or in part or denied.

Their case was clinched, committee members further held, when Edward Lefler, general manager of a two-year-old aviation magazine and book-publishing concern, admitted that refusal to appear before an earlier committee hearing on the subject last August may have had something to do with the WPB's granting of only part of the company's newsprint request.

Previously, the committee had heard several publishers tell of unsuccessful efforts to obtain additional paper allocations, although they all had claimed to have strong cases. Some cited allegedly comparable situations in which competitors obtained additional supplies.

It was repeatedly emphasized by the committee members that in no cases did the WPB division give reasons for its rulings.

Mr. Lefler after some recollection, finally said that he and Philip Andrews, head of the firm, the Philip Andrews Publishing Company, had agreed that it would "prejudice their case" before the WPB to accept an invitation to testify on their paper problems before the Truman Committee while their appeal was pending before the allocation agency.

He could not recollect that anyone on the WPB had advised them that such prejudice might arise. Other reasons for not accepting the committee's invitation, he said, were that he and Mr. Andrews were "too busy" supporting their appeal to take time off to testify before the committee, and that they did not believe they had any information of value to offer.

A few days after their disregard of the invitation, he agreed, however, the company received an additional paper grant. He thought the reasons were a "more adequate presentation" than several earlier ones to the effect that the company's principal competitor had received an additional allotment.

Tells New Standard for Allocation

WASHINGTON, D. C., May 22, 1944—Under a proposed set of standards for allocation of newsprint to newspapers the War Production Board is planning full publicity on all appeals in hardship cases, Donald M. Nelson, WPB chairman, told members of the Truman Committee today.

He discussed the new standards, which he said had been presented to the WPB Newspaper Industry Advisory Council for consideration, in answering criticism of the committee that the WPB in the past had not made its provisions for grants on appeal sufficiently known to the public.

The new standards include provisions, Mr. Nelson said, for publishing periodically any grants made in hardship cases.

They would also provide that extra allocations of newsprint not be given in areas where population has increased, but circulation has not; and that extra allocations be denied for the purpose of compensating a publisher for circulation "returns." The WPB already allows automatic increases in newsprint allocations for papers which show circulation increases of 10 per cent or more.

Answering Senator Ralph O. Brewster of Maine who wanted to know why WPB files on appeal cases had been kept secret, Mr. Nelson said he felt that it had been "a mistake" to accept certain information from publishers on the understanding that it would remain confidential.

"Publishers appealing for additional newsprint have always cooperated with us by turning over any information we asked for. We accepted it on a confidential basis, and in view of this I thought it should not be made public," said Mr. Nelson. "I now think it was wrong to accept any information which a publisher would not wish to be made public, and we are no longer doing it, nor shall we do so in the future."

Senator Brewster and Senator Homer Ferguson of Michigan were critical of the WPB's handling of "the Philadelphia" case in which one newspaper was reported to have received in one year a total of 21,000 tons of newsprint through appeal grants.

Mr. Nelson in a statement emphasized that he regarded the WPB as "a custodian of available paper for the industry."

"Paper is a medium for free speech. If the press has the opportunity to exercise free speech, I am convinced that the American public will be informed," he declared. For this reason, he added his agency has steadfastly avoided telling the newspapers how they should curtail their use of paper, since such a policy would be "a form of censorship."

He said that he would be "more than glad" to cooperate with members of the industry or of Congress in drawing up legislation to put paper distribution under an independent agency.

Senator Carl A. Hatch of New Mexico, who presided, said he was aware of no general interest in such legislation.

Arthur R. Treanor, director of the WPB Printing and Publishing Division, and Dr. Arthur N. Holcombe, chairman of the WPB Appeals Board, also appeared to answer questions.

To Handle Forward Bond

The Cincinnati Cordage and Paper Company of Knoxville, Tenn., has been appointed distributor in that territory of Forward Linen Ledger and Forward Bond, two 100% cotton fiber papers made by the L. L. Brown Paper Company, Adams, Mass. This company has been an agent for some time for other L. L. Brown papers including L. L. Brown's Linen Ledger, Greylock Ledger, Escort Ledger, Advance Bond and Escort Bond.

Log Scaling Book Out

A popular 12-page leaflet, "Log Scaling" has just been issued by the New York State College of Forestry at Syracuse University.

It includes log rules in common use and methods of measuring all types of logs. It deals with allowance for inside and outside defects, crooks, butt rot and other problems in scaling. This publication will be sent to interested persons without charge.

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending May 20, 1944

STOCKS

	High	Low	Last
A. P. W.	2½	2¼	2⅜
Armstrong Cork Co.	38	37	37¾
Celotex Corp.	11½	11¼	11¼
Celotex Corp., pf.	17½	17	17½
Certain-Teed Products Corp.	62¾	57¾	61
Certain-Teed Products Corp., pf.	59½	58	59½
Champion Paper & Fibre Co.	25¼	24	25¼
Champion Paper & Fibre Co., pf.	110½	110¼	110¼
Congoleum Nairn Co.	24	23¾	24
Container Corp. of America	23½	23⅛	23½
Continental-Diamond Fibre Co.	11¼	11	11⅛
Crown-Zellerbach Co.	16⅞	16½	16¾
Crown-Zellerbach Co., pf.	99⅜	98¼	99⅜
Dixie Cup Co.	16	16	16
Dixie Cup Co.—A	47	44⅞	46½
Flintkote Co.	22¼	19⅝	21¾
Flintkote Co., pf.	109	108¼	108½
Robert Gair	3¾	3½	3⅝
Robert Gair, pf.	14⅞	14¼	14⅞
International Paper Co.	16¼	14¾	16¼
International Paper Co., pf.	79½	75¼	79
Johns-Manville Corp.	91¾	90¾	91¾
Johns-Manville Corp., pf.	....	....	....
Kimberly-Clark Corp.	35¼	34½	35¼
MacAndrews & Forbes	26¾	26¼	26¼
MacAndrews & Forbes, pf.	137	137	137
Masonite Corp.	51½	46¼	50¾
Mead Corp.	9½	8⅞	9½
Mead Corp., pf. A-6%	91	91	91
Mead Corp., pf. B-5½	82	82	82
National Container Corp.	16	14⅜	15½
Paraffine Companies, Inc.	51½	49½	51½
Paraffine Companies, Inc., pf.	....	....	....
Rayonier, Inc.	14¾	14	14⅝
Rayonier, Inc., pf.	30¾	30¼	30¾
Ruberoid Co.	29¼	28½	29¼
Scott Paper Co.	40½	40	40
Scott Paper Co., pf.	112	112	112
Sutherland Paper Co.	....	....	....
Union Bag & Paper Corp.	11¼	10¾	10⅞
United Paperboard Co.	5	4⅝	5
U. S. Gypsum Co.	72⅝	72	72¼
U. S. Gypsum Co., pf.	175	174	175
West Virginia Pulp & Paper Co.	20	18⅞	20
West Virginia Pulp & Paper Co., pf.	106¼	106¼	106¼

BONDS

Abitibi Pulp & Paper Co. 5s '53	73	71⅞	73
Celotex Corp. 3¾s '55	....	....	....
Certain-Teed Products Corp. 5½s '48	101	100	100
Champion Paper & Fibre Co. 4¾s '50	....	....	....
International Paper Co. 6s '55	107½	107½	107½
International Paper Co. 5s '47	103¾	103½	103½
Mead Corp. 3½s '53	....	....	....
West Virginia Pulp & Paper Co. 3s '54	....	....	....

New York Curb Exchange

High, Low and Last for Week Ending May 20, 1944

STOCKS

	High	Low	Last
Great Northern Paper Co.	33	32½	33
Hummel-Ross Fibre Corp.	5¼	4⅞	5¼
St. Regis Paper Co.	4½	4⅛	4⅜
St. Regis Paper Co., pf.	149	148½	149
Taggart Corp.	5⅝	5⅝	5⅝

BONDS

American Writing Paper Co. 6s '61	100	99½	100

Kimberly-Clark Votes Dividend

A quarterly dividend of 37½ cents a share and an extra dividend of 12½ cents a share was declared last week by Kimberly-Clark Corporation, Neenah, Wis. Both are payable July 1 to stockholders of record June 12. The corporation previously paid 25 cents a quarter with extras, paying 25 cents last October 1, and 50 cents last December 23.

Continental-Diamond Reports

The Continental - Diamond Fibre Company and subsidiaries, for the three months ended March 31, reports sales of $2,936,462, compared with $3,263,-953 a year ago; net income was $83,878 after taxes and charges, equal to 19 cents a share on 450,000 capital shares; year ago $133,669 and 30 cents a share.

International Paper Nets $2,116,706

Richard J. Cullen, chairman of the corporation, in submitting the statement of consolidated profit and loss of the International Paper Company and subsidiaries for the first quarter of 1944 together with the corresponding statement for the first quarter of 1943, stated that, "Net profit for the first quarter of 1944, prepared on the same basis as figures for the year 1943 except that income and excess profits taxes have been accrued at 1944 rates, amounted to $2,116,706 compared with $2,023,118 for the first quarter of 1943."

The statement of consolidated profit and loss of the International Paper Company and subsidiary companies for the periods mentioned are as follows:—

	3 Mos. Ended March 31, 1944	3 Mos. Ended March 31, 1943
SALES AND OTHER INCOME:		
Gross sales, less returns, allowances and discounts	$55,306,946.72	$50,964,384.40
Other income—net	1,515,003.71	1,158,110.23
	$56,821,950.43	$52,122,494.63
COST AND EXPENSES:		
Cost of sales:		
Pulpwood, labor, materials, etc	$33,171,997.48	$31,484,211.73
Maintenance and repairs	2,963,921.36	2,565,989.47
Taxes (other than income taxes)	963,572.80	914,336.58
Outward freight and delivery expenses	5,049,650.57	5,648,775.60
Selling, general and administrative expenses	1,690,036.13	1,605,436.97
Provision for doubtful accounts		29,764.83
	43,839,178.34	42,248,515.18
	$12,982,772.09	$ 9,873,979.45
DEDUCTIONS:		
Interest on funded debt	$ 623,343.13	$ 655,992.46
Interest on other debt	3,381.25	2,784.62
Amortization of debt discount and expense	52,491.36	55,441.95
Depreciation	2,973,870.06	2,881,692.13
Depletion	226,023.22	239,274.28
Dividend on preferred stock of subsidiary	1,712.50	1,712.50
	3,880,821.52	3,836,897.94
	$ 9,101,950.57	$ 6,037,081.51
Less: Provision for Taxes Based on Income:		
U. S. Federal taxes:		
Normal	$ 930,012.00	$ 1,091,765.00
Excess profits (net)	5,773,128.00	3,230,279.00
State taxes	130,062.00	81,557.00
Canadian and other foreign taxes	181,579.54	53,903.34
	7,014,781.54	4,457,504.34
	$ 2,087,169.03	$ 1,579,577.17
ADD: Post-War Excess Profits Tax Credit:		
U. S. Federal	$ 603,576.00	$ 323,028.00
Less: Credit for debt retirement, applied to reduce excess profits tax above	262,638.00	
	$ 340,938.00	$ 323,028.00
Canadian		6,421.46
	340,938.00	329,449.46
	$ 2,428,107.03	$ 1,909,026.63
Less: Earnings of foreign subsidiaries before interest on obligations held by International Paper Company — transferred to Reserves	311,400.75	114,091.92
NET PROFIT	$ 2,116,706.28	$ 2,023,118.55

The above figures are subject to the effect of renegotation of contracts, and are subject to audit and final adjustment at December 31st (end of fiscal year).

Certain-teed Profits Up

The Certain-teed Products Corporation and its wholly owned subsidiaries showed an increase in earnings before taxes in the March quarter to $434,351 from $201,802 in the same three months of last year, the company reports.

After deducting $239,094 for Federal and Canadian taxes, the net profit was $195,257, equal to $2.90 a share on the $6 preferred stock. This compares with

$119,236, or $1.77 a preferred share, in the March quarter of 1943, when taxes were only $84,896.

Net sales were $4,987,781, against $4,649,761. The report states that no portion of the first quarter net profit of the Sloane-Blabon Corporation is included in the income statement of Certain-teed.

Reports on Pulpwood Receipts

Figures on estimated receipts for the second and third quarters of 1944, according to the Pulpwood Advisory Committee of the WPB, compiled from figures submitted by the mills, show an anticipated increase in the second quarter of 13% over the second quarter of 1943 and a decline of 2% below the 3-year average; for the third quarter, the estimate is 2.5% below 1943 and 5.7% below the 3-year average.

Although the over-all figures are encouraging, Mr. Madden, a committee member, cautioned against optimism, pointing out that receipts and consumption must be considered in conjunction with all related problems of this industry. Viewed in that light, the outlook is not so bright.

National Container Nets 78 Cents

The National Container Corporation and subsidiaries for the March quarter, including estimated earnings of recently acquired Bedford Pulp and Paper Company, Inc., and its wholly-owned subsidiary, reports consolidated net income was $258,787, equal to 78 cents each on 330,482 shares of $1 par common stock. This compares with $175,140, or about 53 cents a share, last year. Company set aside $25,000 for renegotiation and contingencies, but none was set aside for this purpose in the 1943 quarter.

National Paper Products Changes

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., May 22, 1944—Peter T. Sinclair, general manager of the local branch of the National Paper Products Company, affiliated with the Crown Zellerbach interests, is to be transferred in the near future to the Pacific Coast area where he will serve in an important capacity. He has been general manager of the local branch since 1938 and entered the employ of the concern in 1928. He was transferred from the Pacific area at that time to take the post as resident engineer. Ray J. Schadt, the newly appointed general manager, has just completed a long term of service in the chemical warfare division of the army. Mr. Schadt has been with the corporation for several years being connected mainly with the western operating division. Announcement is also made of the appointment of Harold F. Carpenter as assistant manager. He has been with the firm since 1932, having served in various capacities since assuming a position in the technical division.

Amends Inventory Restrictions

Inventory restrictions of converters of pulp, paper and paper board, prescribed in War Production Board Conservation Order M-241-a, have been amended to limit the total over-all quantity of pulp, paper and paper board on hand instead of the amount of each particular paper grade, officials of the WPB Paper Division said. Heretofore inventories were limited to two carloads or not greater than 30 days' supply at the current rate of consumption of each grade of pulp, paper and paper board, but now apply to the over-all quantity.

TO PULP AND PAPER MILL EXECUTIVES

The millions of cords of wood standing and growing on more than 100,000,000 acres of commercial forest land in the territory served by the Seaboard Air Line Railway constitute a resource of incalculable value.

All the possibilities from this renewable raw material have not been realized due to lack of an integrated market for utilization of all conditions of trees. We need more pulp mills in this area to provide markets for wood not suitable for other commercial purposes.

We will welcome the opportunity to furnish information regarding outstanding locations for the establishment of your proposed plant.

WRITE

Dallas T. Daily,
General Industrial Agent
Seaboard Air Line Railway
Norfolk 10, Virginia

Pulpwood Cutters Benefit

Pulpwood cutters of 26 or over, regularly engaged in this essential Home Front occupation, are generally eligible for deferment under the new Selective Service rules recently announced, the War Activities Committee of the Pulpwood Consuming Industries this week advised the Victory Pulpwood Committee.

Deferment of men from 26 through 29, the committee explained, is authorized if the registrant is "necessary to and regularly engaged in" a war activity such as pulpwood cutting. Men of 30 or older, however, may be deferred merely if they are "regularly engaged in" such work.

The test for deferment in the age groups of 26 through 38 years, according to Selective Service, is now whether a man is doing his duty on the Home Front.

"This new Selective Service program is particularly welcome at this time," the committee said, "because of the great wartime need for pulpwood and the military and essential civilian products that are made from it.

"The clarity of the orders issued by Maj. Gen. Lewis B. Hershey should eliminate much of the confusion that has prevailed since the war unit system was abolished. There should no longer be any question as to the war essentiality of pulpwood cutters.

"Some further clarification is needed from Selective Service Headquarters on the rights of agricultural workers between the ages of 18 and 26 to list pulpwood cutting as one of their farm activities entitling them to deferment," the Committee added. "The war unit system recognized pulpwood production as a farm occupation, and while it has been abolished, the same yardstick for measuring the essentiality of farm workers should be applied under the Tydings Act."

The War Activities Committee pointed out that General Hershey has advised local draft boards to use the War Manpower Commission's list of 35 essential activities as a guide in granting deferments under the new program.

No. 7 on this WMC list, under the general heading of "Forestry, Logging, Lumbering and Forest Industries," specifically mentions "cutting of pulpwood."

"The activities contained in this list," said General Hershey's memorandum of May 11 to local boards, "represent on a national basis the most important activities in war production and in support of the national health, safety or interest. The list of essential activities should be used by the agencies of the Selective Service System as a guide and should be considered in occupational classification matters along with all other available information."

The new Selective Service regulations also make provision for reclassifying 4-Fs into 2-A and 2-B providing they are engaged in an "essential" activity such as pulpwood cutting.

Lithographers Elect Officers

At the 39th Annual Meeting of the Lithographers National Association held at the Edgewater Beach Hotel in Chicago May 8-10, 1944, the following officers and directors of the Association were elected for the year 1944-45: Maurice Saunders, chairman of the board; Louis Traung, president; George E. Loder, vice president; George C. Kindred, treasurer; W. Floyd Maxwell, secretary, and Percival D. Oviatt, general counsel.

Layoff Rate Shows Increase

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 22, 1944—For every 1,000 workers on factory payrolls in March, 1944, 73 either changed jobs or left manufacturing work, Secretary of Labor Frances Perkins reported today.

"The separation rate increased from 65 per thousand in February to 73 in March," she said. "This reflects an increase in the quit, military separation and layoff rates."

Broken down into the various causes for separation, the March figures show that the rate of quits increased from 46 per thousand in February to 50 per thousand in March, military separations increased from 5 to 7 per thousand, the layoff rate increased from 8 to 9, the rate of discharges was 6, the same as during February and the separation rate for miscellaneous reasons (deaths, etc.), as in February, was one per thousand.

The rate of accessions (new hires) during March was 56 per thousand employes as compared with 53 in February.

" 'Return to the farm' was the reason most frequently advanced for the increase in the quit rate," Secretary Perkins reported. "Under the manpower controls now in force, many farm workers were loaned to industry for the winter months with the understanding that they would return to agricultural occupations in the spring.

"The military separations of 7 per thousand during March is higher than any month since April, 1943. That many occupational deferments have recently been cancelled was indicated by the large military separation rates in the small arms ammunition; aluminum, smelting, and refining; and machine tools industries. All major industry groups and all but 4 of the individual industries had higher military separation rates than in February.

"Further cancellations of contracts for war materiel are reflected in the lay-off rate to 9 workers per 1000. Lay-off rates above 10 per 1000 were reported by the chemicals, the non-ferrous metals, automobile, lumber, and ordnance groups.

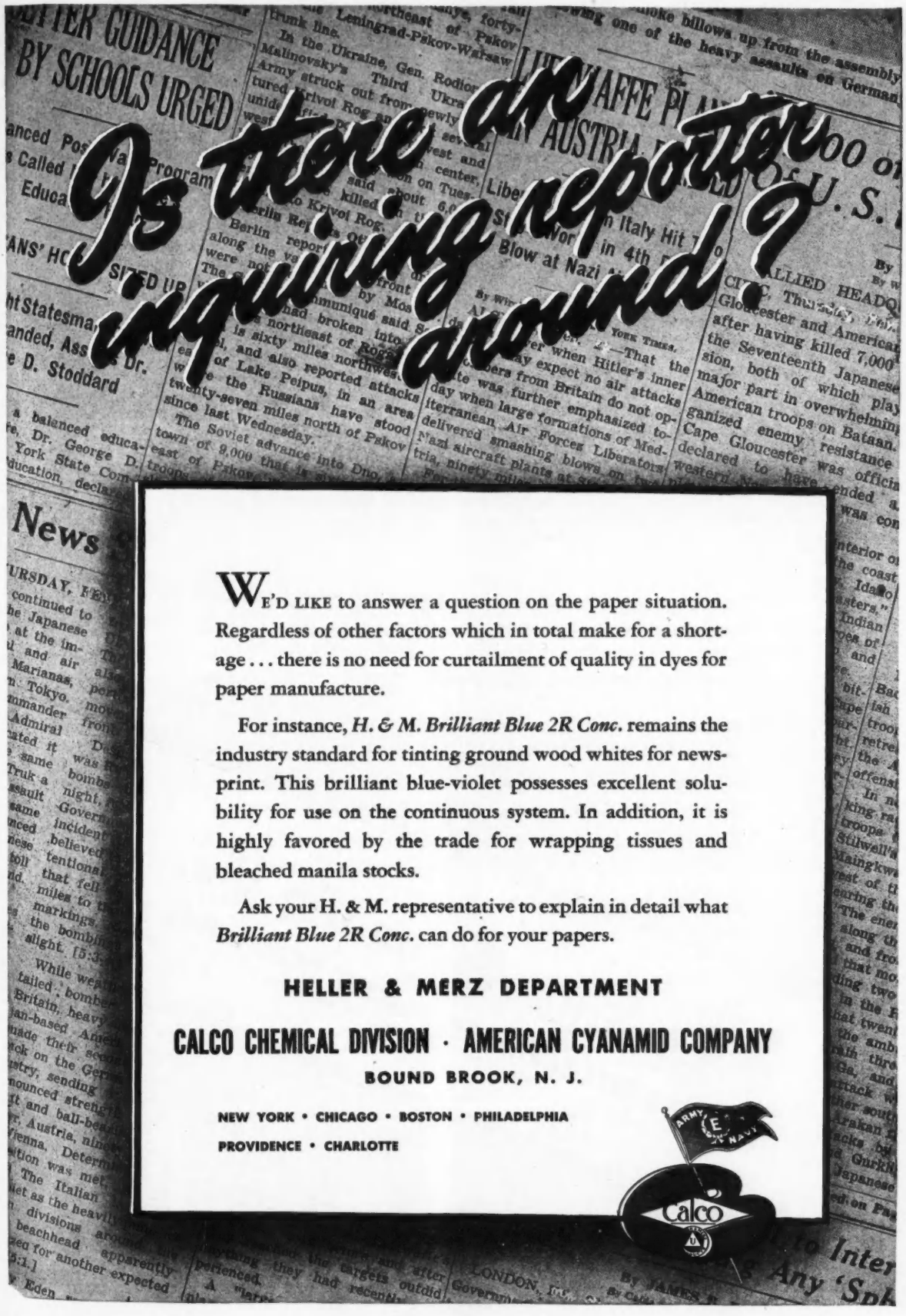
"The total separation rate in the metal mining group as a whole was slightly below that for manufacturing. However, the separation rates in the lead and zinc ore mining industry and in the miscellaneous metal mining industry were higher than in manufacturing. Many of the quits in the metal mining industries were due to the recall of furloughed soldiers to active duty, and to the return of civilians to farm work.

"Quit rates for women are still considerably higher than for men, being 58 per 1000 as against 42 per 1000 for men. When allowance is made for military separations, separations other than quits such as layoffs and discharges are higher for women than for men."

Milford Paper Box Co. Incorporates

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., May 23, 1944.—The Milford Paper Box Company, Inc., 72 Depot street, Milford, Mass., box manufacturing has been incorporated with a capital stock of $50000, consisting of 500 common shares of $100 each. Thomas Wallace Scott is president; Arthur J. MacDonald, 26 Preble Gardens road, Belmont, Mass., treasurer, and Mary V. Nestor is the third incorporator.



WE'D LIKE to answer a question on the paper situation. Regardless of other factors which in total make for a shortage . . . there is no need for curtailment of quality in dyes for paper manufacture.

For instance, *H. & M. Brilliant Blue 2R Conc.* remains the industry standard for tinting ground wood whites for newsprint. This brilliant blue-violet possesses excellent solubility for use on the continuous system. In addition, it is highly favored by the trade for wrapping tissues and bleached manila stocks.

Ask your H. & M. representative to explain in detail what *Brilliant Blue 2R Conc.* can do for your papers.

HELLER & MERZ DEPARTMENT

CALCO CHEMICAL DIVISION · AMERICAN CYANAMID COMPANY

BOUND BROOK, N. J.

NEW YORK • CHICAGO • BOSTON • PHILADELPHIA

PROVIDENCE • CHARLOTTE

Indianapolis Demand Heavy

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., May 22, 1944 — There appeared no decrease in demand for all grades of paper during the last week. All grades were in good demand, far beyond the ability of the trade to satisfy. The backlog of orders rises apparently each week and some of them, naturally, never can be filled. Demand from priority industrials and the armed forces for all grades continued very heavy last week.

The kraft situation has become more acute in this territory. Demand for wrapping paper and bags was very heavy and the supplies have become increasingly scarce. Prices are at ceiling levels and there is nothing to indicate any change in demand or supply. In the past few weeks here there has been little said about conserving wrapping paper and bags and it seems that another publicity drive will be necessary to bring the public to a sense of the seriousness of the situation.

Fine paper demand continued heavy with scarcities noted in all lines of books, covers and ledgers. Prices were strong. Tissues moved well and supplies generally were inadequate.

Box factories are covered up with unfilled orders. Raw materials appeared to be a trifle more ample than during the first part of the year, but the situation is not good. The manpower situation is bad with most plants having to curtail production because of lack of help. Women and older men are being urged to fill in the places left by those inducted in the armed services and those who have gone to the higher paid defense industries.

Newsprint demand continued good with practically all publications taking their allotments. Advertising lineage continues to be turned away. In fact the newspapers have more business unsought than they have had sought in other years. No particular attempt is being made to increase circulations, though skeleton circulation staffs are being maintained to handle routine business.

Brown Elects Officers

At postponed meetings held last week, Frederic G. Coburn, president, and other directors and officers of the Brown Company and Brown Corporation, its Canadian subsidiary, were re-elected with the exception of R. H. Marshall, comptroller, who resigned because of ill health. The new comptroller is R. R. Norwood, previously assistant comptroller.

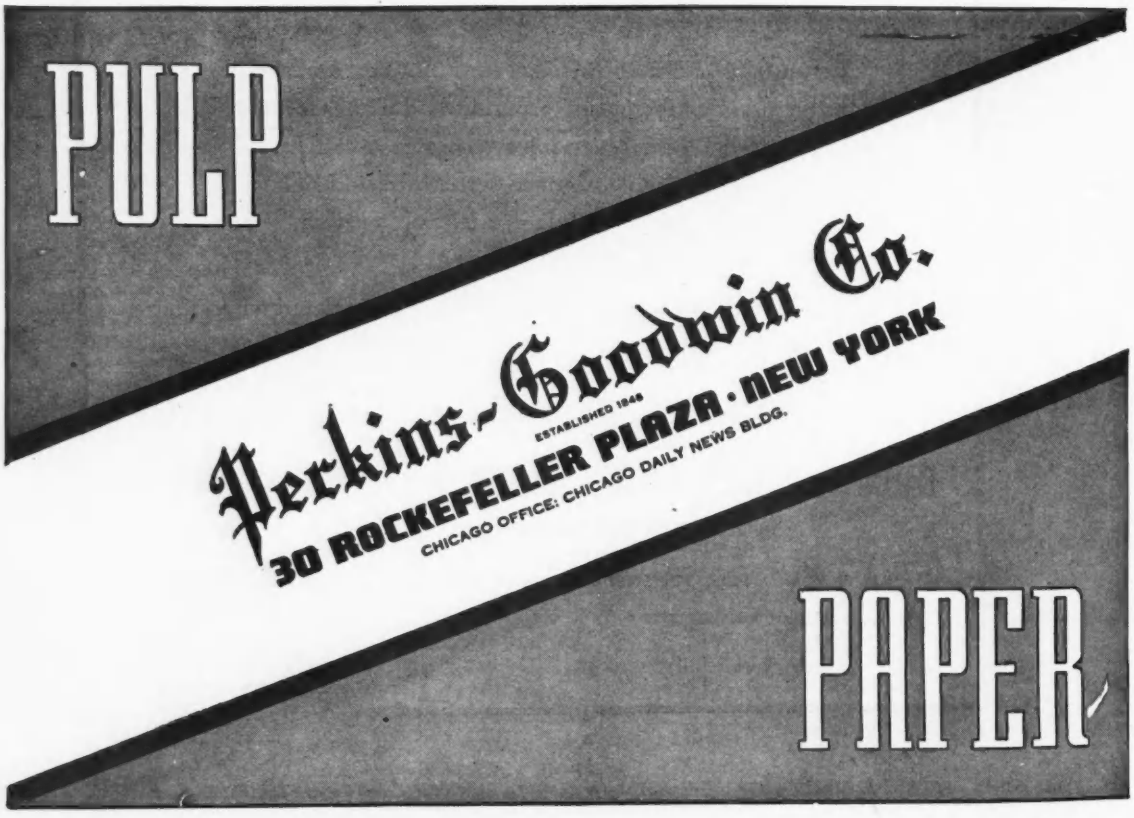
On June 1 the company will make its semi-annual payment of interest on its general mortgage 5% cumulative bonds for the six months ending May 31. Checks will be mailed to all registered owners as of the close of business on May 31.

Paper Indexes Rise

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 24, 1944—The indexes of the value of paper manufacturers shipments in March was 173 compared with 171 in February and 155 in March last year and 152 in February of last year taking an average month of 1939 at 100 according to the monthly industry survey of the Department of Commerce.

The March indexes of the value of paper mill inventories was 137.0 compared with 133.4 in February and 139.3 in March of last year and 140.7 in February of last year also taking an average month of 1939 at 100.



Newsprint Consumption Decreases

Daily newspapers reporting to the American Newspaper Publishers Association, consumed 201,136 tons of newsprint paper in April 1944 compared with 243,281 tons in 1943 and 256,431 tons in 1941. This was a decrease in April 1944 under April 1943 of 17.3% and a decrease under April 1941 of 21.6%.

The total estimated newsprint consumption in the United States for April 1944 was 268,181 tons which includes all kinds of uses of newsprint paper. For the first four months of 1944, it was estimated to be 1,040,028 tons.

During the first four months of 1944 the reporting newspapers used 780,021 tons of newsprint, a decrease of 14.8% under the first four months of 1943, and a decrease of 19.1% under the first four months of 1941.

The stocks of newsprint paper on hand with newspapers reporting to the ANPA was 47 days' supply at the end of April 1944 which was a decrease of 1 day's supply from 48 days on hand at the end of March 1944.

Fifth Award of Navy "E"

Again the Navy has recognized the continued excellence of the Farrel-Birmingham Company war production record by awarding the Navy "E" for the fifth time to its three plants in Ansonia and Derby, Connecticut, and Buffalo, New York.

In the notification of the fourth renewal of this honor, Admiral C. C. Bloch, U. S. N. (Ret.), chairman of the Navy Board for Production Awards, heartily congratulated every man and woman of the Farrel-Birmingham Company for the splendid record they have established and maintained. He stated that the determined support of all is required to back up our courageous men on the battle fronts.

In his acknowledgment J. W. Haddock, president of the company, pledged the continued effort of the entire Farrel-Birmingham organization to produce needed equipment to meet speedily and thoroughly the requirements of the services.

The "E" award, traditional Navy symbol for a job well done, was originally made to the three Farrel-Birmingham plants in Ansonia, Derby and Buffalo in March, 1942, only three months after Pearl Harbor, and subsequently renewed in October, 1942, March, 1943, September, 1943 and again at the present date, each renewal adding another prized white star to the burgees which are flown over the company's plants.

In addition to making marine gear drives, the company builds heavy machinery for other war production plants in the steel, non-ferrous metal, rubber, plastics, paper and other industries.

Edward Lewandowski Dead

Edward H. Lewandowski, age 46, Neenah, Wis., assistant treasurer of the Menasha Products division of the Marathon Paper Mills, died unexpectedly Thursday morning, May 18, at the Bismarck Hotel, Chicago. Born November 4, 1897, at Menasha, Wis., he had been a life resident of the twin cities. He was a member of the Elks lodge, the Menasha club, and the Henry J. Lenz Post of the American Legion. Survivors include the widow, one son, James, his mother, two brothers and four sisters.

We're in it for the duration

SINCE 1828

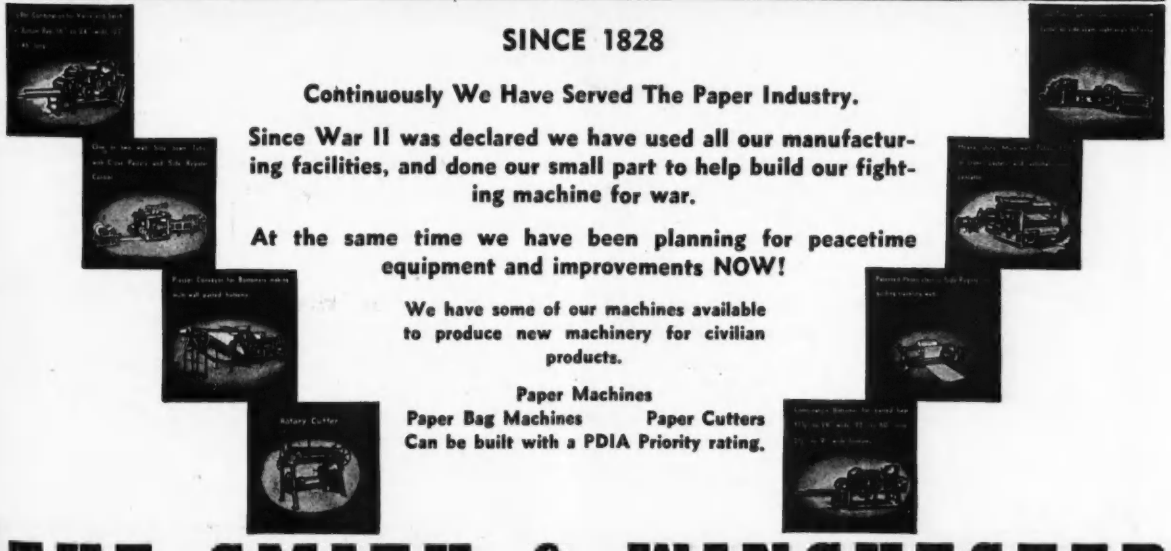
Continuously We Have Served The Paper Industry.

Since War II was declared we have used all our manufacturing facilities, and done our small part to help build our fighting machine for war.

At the same time we have been planning for peacetime equipment and improvements NOW!

We have some of our machines available to produce new machinery for civilian products.

Paper Machines
Paper Bag Machines **Paper Cutters**
Can be built with a PDIA Priority rating.



THE SMITH & WINCHESTER
MANUFACTURING COMPANY
PLANT AND OFFICES AT SOUTH WINDHAM, CONNECTICUT

New Era in Flow Rate Measurement

Fischer & Porter Company offers a new, highly-interesting, highly instructive catalog on the F&P Rotameter, the area-type flow meter that has gained such widespread acceptance for accurately measuring the flow rate of liquids and gases. This catalog — 10-B, entitled "A New Era in Flow Rate Measurement" contains 32 pages of the latest authoritative information on this remarkable instrument.

Each basic advantage of the Rotameter is thoroughly discussed. . . . How it works. . . . Its extremely high accuracy. . . . How it can be made immune to variations in viscosity and specific gravity. Large, semi-humorous illustrations dramatize each point to make it readily understandable. A list of fluids successfully handled and some typical applications are included.

This complete, absorbing catalog 10-B contains information invaluable to engineers with flow rate problems. A copy is readily obtainable, without obligation, by writing to Fischer & Porter Company, 949 County Line Road, Hatboro, Pa.

To Distribute Forward Linen Ledger

The Olmsted-Kirk Company has been appointed a distributor of Forward Linen Ledger in Dallas, Fort Worth and Waco, Texas. This 100% new cotton fibre paper is made by the L. L. Brown Paper Company, Adams, Mass. Other L. L. Brown papers for which the Olmsted-Kirk Company is an agent are L. L. Brown's Linen Ledger, Greylock Ledger, Resistall Linen Ledger and Resistall Index Bristol.

Cleveland Container To Start Branch

OGDENSBURG, N. Y., May 22, 1944—Announcement is made here that the Cleveland Container Company will start the construction of a new branch soon at Prescott, Ont., Canada. The new factory will provide about 20,000 square feet of space and is expected to produce both plastic and fibre containers similar to the products of the local plants. In many instances some operations will be started at the local plants and then the products will be sent to the Prescott mill for finishing. At present the two mills here provide about 75,000 square feet of space and it was announced that the company has completed plans for the construction of an additional mill which will provide about 10,000 feet of floor space. From a relatively small beginning less than two years ago the company has expanded to become among the largest industries in the city. Primarily a peacetime concern engaged in the manufacture of cheese containers, the concern is expected to have a large post-war market for its products.

Allymer To Be Name for Resins

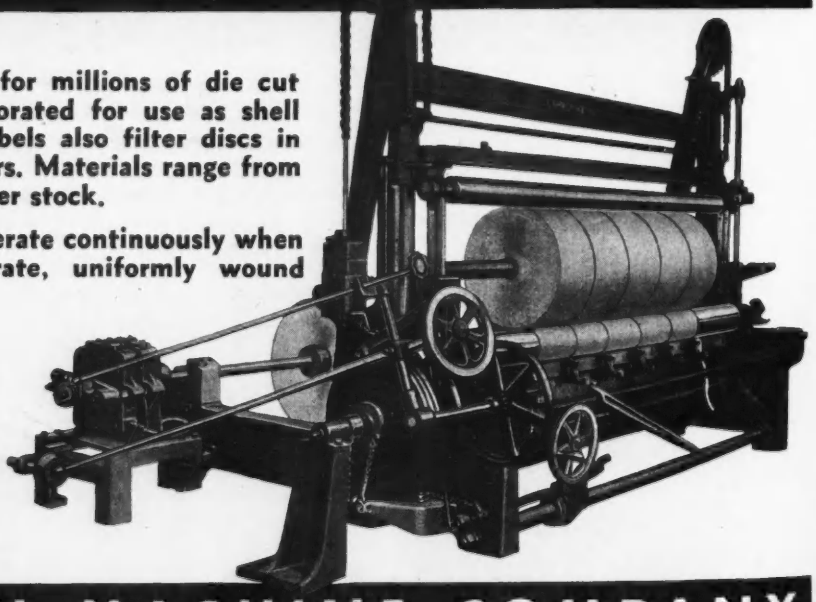
Pittsburgh Plate Glass Company, Columbia Chemical Division, Barberton, Ohio, announces the selection of the trade name "Allymer" for the complete line of Allyl Resin Monomers formerly known as Columbia Resins and designated as C.R. 39, etc. The numbers such as 39 and 149 will be continued to designate types. A series of bulletins describing various types and phases of Allymer will be distributed from time to time.

KEEP DIE PRESSES BUSY
with CAMERON-WOUND ROLLS

The war effort calls for millions of die cut discs, plain and perforated for use as shell primer discs, tags, labels also filter discs in airplane gasoline filters. Materials range from onion skin to felt paper stock.

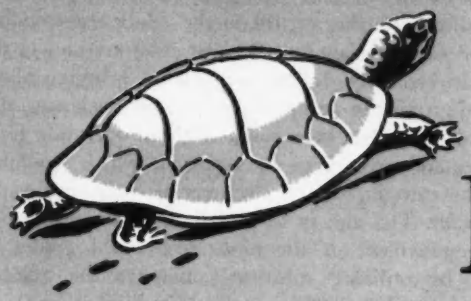
Die punch presses operate continuously when supplied with accurate, uniformly wound Cameron rolls.

One Camachine keeps 26 die punch presses busy, so if you are being pressed to deliver war orders, use a Camachine to speed production.



CAMERON MACHINE COMPANY

61 POPLAR STREET, BROOKLYN 2, N. Y. MIDWEST OFFICE: 111 WEST MONROE STREET, CHICAGO 3



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Slow speed for inching, threading and close inspection of work in process is but one example of the versatility of Reliance motor-drive. Properly applied, motor-drive is more than power. In addition to controlled and variable speed, it can be the means of: smooth, controlled acceleration—automatic reversing, quick stopping—control of tension—tandem operation. With Reliance motor-drive these functions can be provided electrically, eliminating such mechanical devices as clutches and gears.

Reliance engineers have had wide experience in developing new uses for modern motor-drive and, in cooperation with plant engineers, adapting basic developments to specific industrial problems. Perhaps this experience can be usefully applied in *your* plant. It is available on request. Ask for Bulletin 311 showing application of an all electric adjustable speed drive for A. C. circuits.

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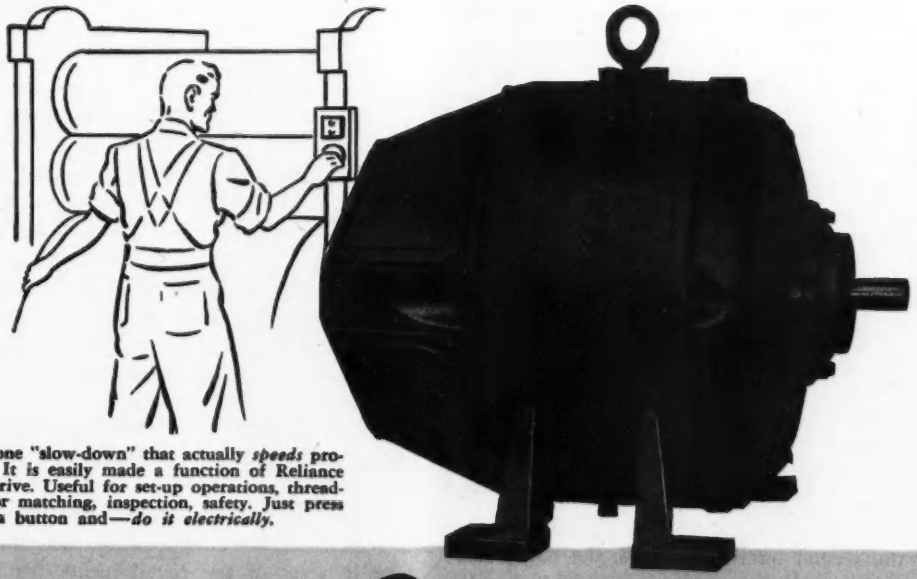

There's one "slow-down" that actually *speeds* production. It is easily made a function of Reliance Motor-Drive. Useful for set-up operations, threading, color matching, inspection, safety. Just press a button and—*do it electrically.*

RELIANCE A·C D·C MOTORS

PAPER
TRADE JOURNAL
Title Reg. U. S. Pat. Off.
Henry J. Berger, Editor

COMING EVENTS IN PAPER INDUSTRY

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

CHICAGO PROFESSIONAL PAPER GROUP—First Monday of each month except July and August at Chicago, Ill.

AMERICAN PULP AND PAPER MILL SUPERINTENDENTS ASSOCIATION—25th Anniversary Convention, Edgewater Beach Hotel, Chicago, Ill., May 24, 25 and 26.

WOOD PULP

Production of wood pulp is at a fairly high ratio and preliminary reports indicate the trend in output is now above the tonnage in the corresponding period of last year. The paper stock supply situation is also improved and pulpwood receipts are rising. Although mill inventories are relatively low, there has been some improvement from the low point in the final quarter of last year. Production for February 1944 totaling 784,000 tons was 3% below the output of January, which aggregated 809,000 tons, but was 7% higher than for February 1943, when the total production was 731,000 tons. The declining inventory position is indicated in the consumption figures, which includes production and exports. In February, 1944, consumption exceeded supply by 8,000 tons, while in January, 1944, consumption was 24,000 tons in excess of new supplies. At the end of February, 1944, inventories totaled 388,000 tons, or 1% below the January figure of 391,000 tons, and 51% lower than the inventory figure of 796,000 tons in February 1943. There were no considerable differences between the major grades of pulp.

In the comprehensive report of the Department of Commerce on the current wood pulp supply situation, total supplies in the first quarter of 1944 were 90,000 tons higher than in the like period last year. Exports, however, in the first quarter of this year were 32,000 tons larger than new supplies. Inventories at the end of March 1944 were 44,000 tons below January 1, 1944. In commenting on the distribution of wood pulp to paper mills, the report states in part: "In preparing recommendations for the production of paper and paper board, and the allocation of wood pulp for non-paper uses and export for the second quarter of 1944, the policy has been primarily to determine the level of wood pulp consumption most consistent with the best estimates of available wood supplies. Next, was to examine most carefully the paper, paper board and wood pulp requirements presented by the Claimant Agencies, and operating Divisions represented on the Pulp and Paper Production Committee, and to screen them down to the level of wood pulp available for consumption with due regard to the relative essentiality of the various claims to the war program and to the civilian economy. In this process of bringing about an approximate supply-requirements balance, due consideration has been given to those operating techniques and procedures by means of which flexibility can be introduced into the over-all pulp and paper program. The aim is to maximize paper production by employment of the most economical grades of pulp, by utilizing substitute fibers to the greatest extent possible, and by authorizing higher levels of pulp production and consumption in those mills and regions where relatively high wood inventories make such shifts possible."

Commenting on the current distribution of wood pulp the Department of Commerce explains that, "In allocating wood pulp for the second quarter of 1944 the allocations followed closely in line with the wood pulp required for the recommended minimum production of paper for the second quarter. There may possibly be some changes in these allocations, for under the terms of the Program Determination, the Forests Products Bureau was requested to submit on or about May 15, a report covering the status of and outlook for completion of the second-quarter program in the light of latest information then available. The facts contained in that report are expected to determine whether or not interim changes may be necessary in the second-quarter program."

In making second-quarter allocations, the report goes on to say, "the same general allocation policies were observed as were followed in making first-quarter allocations. In keeping with this policy, it was decided that, in general, integrated and partially integrated mills, with the exception of such mills as are producers of sulphate wood pulp, should be directed to withhold and ship as market pulp a tonnage equivalent to 10% of their estimated second-quarter production of wood pulp unless such mills, due to the types of paper they were authorized to produce, were authorized to use more than 90% of their production of wood pulp. In such cases, these mills should be required to withhold for shipment as market pulp the difference between their estimated production and their authorized use of their own wood pulp. However, producers of sulphate wood pulp should be required to withhold for shipment as market pulp the difference between their estimated production and their authorized use of their own sulphate wood pulp, regardless of whether or not this difference exceeded 10%. This action on sulphate wood pulp was necessary in view of the requirements for market pulp of this grade for war and essential civilian purposes."

Relative to the grades of wood pulp allocated, the Department of Commerce states that, "Integrated mills and partially integrated mills were not author-

ized to use market pulp of grades similar to the quality of the pulp produced in their own mill except in those cases where such authorizations were necessary to enable such mills to produce the proper qualities of highly essential types of paper or to enable such mills to maintain approximately a-five-day-per week operating rate."

Issues Summary of WPB Orders

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 22, 1944 — The War Production Board today issued the following summaries of modifications of WPB orders made during the month of April, 1944. Anyone wishing to take appropriate actions under WPB orders should use the official copies of the full orders, the agency cautioned.

Containerboard, Interpretation to M-290, 4-12-44.—Any person who requires containerboard for any purpose whatever is prohibited from accepting it without specific authority of WPB.

Container Machinery, Amended L-332, 4-12-44.—Permits exchange of leased equipment requiring factory rebuilding or reconditioning for new, reconditioned or rebuilt units of same size and type without necessity of first obtaining preference ration order.

Fibre Container Inventories, Direction 1 to L-317, 4-13-44.—Purchasers are directed to cancel or postpone any fibre carton orders that may not be received within inventory limitations.

Japanese Tissue, Revocation of L-297, 4-3-44.—Because present supply of Japanese tissue is adequate and suitable substitute is available, the limitation order has been revoked.

Paper-Mill Machinery, Amendment to L-83, 4-13-44.—Dollar value of repairs and maintenance parts for paper-mill machinery permitted under L-83 was increased from $1,000 to $2,000.

V-Box Production, Direction 2 to M-290, 4-24-44.—To insure timely production of V-boxes and reduce backlog orders for solid-fibre shipping containers, direction was issued.

Kennedy Valve Gets "M" Pennant

In the flag-draped iron machine shop of the Kennedy Valve Manufacturing Company main plant at Elmira, N. Y., 600 employees watched ceremonies at which Charles E. Walsh, Jr., director of procurement of the U. S. Maritime Commission, presented the coveted "M" pennant and Victory Fleet flag to the company recently.

"The work you do here is as important in the war effort as the work performed in any shipyard, aircraft or munitions factory," Mr. Walsh told the assemblage.

"Your response to the demands upon you has been unsurpassed. In delivering eight million pounds of valves for the Victory Fleet program during 1943, you were confronted with many production problems but you met and overcame them. Many times you have gone beyond the required schedule to enable shipyard workers to deliver ships, ready to sail, in record time."

The Kennedy Valve Manufacturing Company is one of six valve manufacturing companies in the nation to receive the "M" award, and one of the 128 manufacturing companies so honored.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1944		Corresponding Weeks—1943	
April 8	88.2	April 10	89.9
April 15	86.7	April 17	89.3
April 22	91.3	April 24	89.7
April 29	90.9	May 1	85.8
May 6 (Revised)	91.5	May 8	90.6
May 13	*89.6*	May 15	91.1

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1943	87.2	88.9	89.5	88.7	91.4	84.8	84.3
1944	89.6	89.6	90.1	*89.5*			

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1943	91.0	88.3	89.6	89.6	82.0	87.8

COMPARATIVE YEARLY SUMMARIES

	1937	1938	1939	1940	1941	1942	1943	1944
Year to Date...	89.6	67.5	80.2	85.7	91.7	102.2	88.9	*90.1*
Year Average....	79.8	71.5	83.4	85.6	97.4	90.4	87.8	

*Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS†

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1938	56	63	63	60	60	59	59	69	70	73	67	61	64
1939	65	73	76	74	69	73	68	77	82	91	88	77	77
1940	78	75	74	76	82	85	77	79	78	85	83	77	78
1941	81	88	89	89	91	94	92	98	95	99	98	90	92
1942	102	101	101	95	82	72	68	75	76	81	82	77	84
1943	86	88	94	94	96	94	89	96	94	94	93	87	93
1944	90	96	95	*96*									

Week ending Apr. 8, 1944—94
Week ending Apr. 15, 1944—92
Week ending Apr. 22, 1944—98
Week ending Apr. 29, 1944—98
Week ending May 6, 1944—98
Week ending May 13, 1944—*95*

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

Canada Further Restricts Paperboard

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., May 20, 1944—Important limitations on the use of paperboard for merchandise and containers will be imposed by the Wartime Prices and Trade Board, effective May 22. Some of the provisions of the new order are:

1. That priority of production and deliveries shall be given all paperboard articles and containers ordered by DMS, by the armed services or by the Department of National Pensions and National Health and for primary packaging of a specified list of foods for human consumption.

2. Complete prohibition of paperboard for producing or packaging some three-score items listed in Schedule I of the order.

3. Percentage limitation on the purchase of paperboard during the 12 months ending April 30, 1945.

The new quotas are based on 1943 deliveries by weight, and range from 60% in the case of games, toys, novelties, jewelry, musical instruments, etc., up to 95% for all items not specifically listed in the schedule.

The restrictions do not apply to those using less than 500 pounds or $250 worth of paperboard. Provision is made for the relief of those who can demonstrate that savings made in 1943 would materially jeopardize present position if the terms of the order were fully carried out.

To Distribute Escort Bond

Announcement is made by the L. L. Brown Paper Company, Adams, Mass. of the appointment of the Parker Paper Company, High Point, N. C., as a distributor of Escort Bond. This paper is formed from 50% new cotton fibres and is stocked in buff, blue, pink and green in addition to white.

PUT MOLD OUT OF BUSINESS

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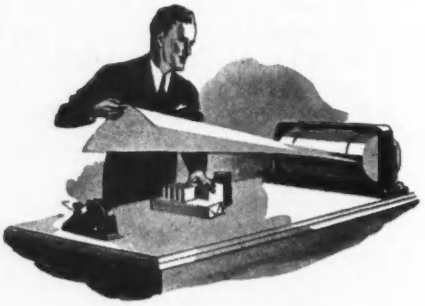

Because of high humidity present at most stages of paper manufacture, mold is a serious problem. Since lap-stock retains a high moisture content and is usually stored before use, many manufacturers are now applying Dowicides at the lapping machine. Pulp that is held in stock chests for some time is liable to "sour" and here again Dowicides are defeating mold and protecting the quality of the pulp. Where it is desirable to produce mold-resistant paper—for example, paper for soap wrappers—Dowicides can be added in manufacture as permanent protection against mold. Adhesives used in paper manufacture can be similarly treated. Write to the Dowicide Division for additional details on how to put mold out of business—*your* business!

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Section of the
TECHNICAL ASSOCIATION
OF THE PULP & PAPER INDUSTRY
122 E. 42nd St., New York 17, N. Y.
Edited by R. G. Macdonald, Secretary

Chemical Composition of Process Water for Fine Paper Manufacture

TAPPI Tentative Standard E 600 s-44

This specification should be considered as a guide in determining the quality of water to be used in the manufacture of fine papers. The figures given are believed to be the upper limits of concentration of the significant impurities which are permissible in the manufacture of the general run of fine papers.

Definition

By fine papers are meant bond, ledger, book, and writing papers.

Chemical Composition

The water shall not contain impurities in excess of the amounts given below, expressed in parts per million and in terms of the substances indicated:

Substance	Maximum, *p.p.m.*
Turbidity as SiO_2	10
Color in platinum units	5
Total hardness as $CaCO_3$	100
Calcium hardness as $CaCO_3$	50
Alkalinity to methyl orange as $CaCO_3$	75
Iron as Fe	0.1
Manganese as Mn	0.05
Residual chlorine as Cl_2	2.0
Silica (soluble) as SiO_2	20
Total dissolved solids	200
Free carbon dioxide as CO_2	10

Notes

1. Certain special papers such as facial, cigarette, filter papers, photosensitive papers, condenser tissues, may require process water of a greater degree of purity than above specified.

2. A limit for pH is not included since desirable limits for pH will depend to a large extent upon the particular type and quality of paper being made, the composition of the water, and the conditions of operation.

3. A limit for soluble sulphates and chlorides is not included since these will be limited by the amount of total dissolved solids.

4. A limit for organic materials is not included since the nature of the organic material is a controlling factor. For some types a much higher limit may be permitted than for others. The limit on color has a limiting effect on the more objectionable types of soluble organic matter. In general, organic materials should be kept as low as possible in process water.

This method has been approved as a tentative standard by the Water Committee. Criticisms are earnestly requested and should be sent to R. G. Macdonald, Secretary, Technical Association of the Pulp and Paper industry, 122 E. 42nd St., New York, N. Y. Reprints of this standard may be obtained from the Secretary at 25 cents each.

Employment in B. C. Forestry Drops

Employment drop in the forestry industry in British Columbia has been 1 per cent annually for nearly 20 years, according to a report just issued by W. M. Mercer, Bureau of Economics and Statistics, of the B. C. government. While employment has been showing a decline, however, timber production has been averaging a 1 per cent increase per year.

Publishing his conclusions in a chart-illustrated booklet, Mr. Mercer makes a plea for more manufacturing processes in connection with timber. More lumber, paper, sashes and doors and similar products, he declares, should be exported in comparison to export of logs.

Export of raw logs, says Mr. Mercer, went up about 1 per cent annually between 1922 and 1940. In addition there was shipment of the scarcely manufactured "Jap squares," which, says Mercer, were used even to the sawdust on arrival in Japan. The sawdust was reported mixed with bark and sold back to B. C. as hand cleaner.

Mr. Mercer concludes that the present rate of increase in cut of timber can not last and, if it halts, a severe drop of employment will result. He declares further that the wage earners in industry needed for each 1000 million feet of timber cut fell 2½ per cent between 1922 and 1940.

"Although it would be wrong to say that export of logs and squares has been entirely responsible for decline in employment per unit of timber cut," he says, "it may be said that greater emphasis on export of the primary or near primary resources would have counteracted the trend of decreasing employment per unit.

"We may expect technological improvements which will further reduce the ratio between employment and production," he concludes.

"At the same time, increase in secondary production between World Wars I and II in plywood, paper products, etc., was not at a rate sufficient to prevent a decline in total employment for each unit of timber cut.

"Add to this the fact that the industry will be expected to provide increased employment in the post-war period and we have the background of the basic problem."

Bituminous Emulsions in V Boards and Containers*

By E. M. Lorenzini[1]

Abstract

Both the history and some of the technical aspects of bituminous emulsion sizing are briefly discussed. Practical advantages in multicylinder machine operations and in finished product results are also reviewed presenting theory of water resistance and wet strength. Performance data on production runs of weatherproof V boards and boxes are presented with a discussion of comparative efficiencies of sizing and wet strength.

A brief description of the use and advantages of emulsified bitumen as an extender for weatherproof laminating adhesives, is also presented.

The purpose of this presentation is to briefly review some of the general characteristics of bituminous emulsions and, more specifically, to describe their use and performance now in practice in a number of mills throughout the country.

A large amount of fundamental research has been done in the complex chemistry of bituminous emulsions, but there is considerable groundwork in its relation to paper which is at the present time still in process. It is not intended to discuss the chemistry of this subject except to touch on some of the physical characteristics related to the results in the finished paper.

Petroleum asphalts and other bituminous materials are well established and have long been known to specialized divisions of the paper industry. The common forms of so-called "hot asphalt" have long been used as waterproofing agents in the form of cutback saturants or in barrier membranes and coatings applied to paper. These types of applications give excellent waterproofness in the finished product.

The emulsification of special bituminous products for use in watery mediums is neither new or novel art. Early attempts at the use of emulsions for waterproofing paper were first made in Europe about forty years ago.

Despite the early recognition of the possibilities of bituminous emulsion in paper it enjoyed relatively little early success as a size, except in limited board specialties applied principally to the simple mechanisms of single cylinder wet machines. However, recent discoveries and refinements in the basic preparation of such products are now definitely bringing a wider usage and interest in more advanced types of applications.

Bituminous Emulsion As Internal Sizing

One of the most important present-day uses of bituminous emulsions is in the form of sizing applied to multicylinder boards, subsequently used for laminating into "V type" waterproof containers. Its application as a sizing material follows the same general practice of other common forms of beater size. The emulsion is admixed to near-neutral or alkaline pulp stocks directly in the beaters or introduced somewhere along the stock flow line in back of jordans in order to get thorough mixing. Alum or alum in conjunction with other electrolytes is used to precipitate the bituminous solids on the fiber, preferably after the stock refining cycle is completed. The bituminous treated fiber stock is thus prepared for use on the paper machine.

Before describing machine operations, there are several interesting considerations surrounding the characteristic of a bituminous emulsion for sizing purposes. The emulsion should be of ready flowing uniform liquid consistency, capable of long period storage to facilitate handling and pumping. It must retain readily dispersible emulsion properties despite extreme dilutions and violent agitations, all without "breakdown" or improper coalesence of the dispersed particles. The degree of dispersion of the bituminous material should be principally and uniformly confined within a range of between 1 and 5 microns in diameter. While in a dilute system its action with alum must render a uniform flocculence in which the bituminous particles remain discrete and without coalescence.

All of these properties are, of course, designed to give complete and uniform dispersion of the size throughout the pulp stock. It can be said that the most important characteristic in this type of emulsion is reflected by both the special treatment of the original bitumen, coupled with a proper chemical emulsion structure.

For practical purposes, the microscopic dispersion of the size particles introduced into a watery fibrous system can be visualized as something similar to a filler of high retention properties. The particles at the fiber surfaces during both the wet sheet formation and the subsequent wet pressing are physically inert without danger of stickiness which would otherwise foul wires and felts. Introduction of heat upon passage of the wet sheet through the driers results in the thermoplastic reaction of the size particles, which forms further bond with the fibers. The microscopic dispersion of the discrete particles even under conditions of extreme heat, precludes the possibility of actual thermoplastic flow that might otherwise cause bleeding. In effect the net result is a "penetrating stain" uniformly applied to each fiber, in which there is no evidence of stickiness. The finished treated sheet ranges from light to dark brown in color, dependent on amount of size employed.

The amount of bituminous solids commonly employed in multicylinder products may cover a range of from 1 to 15%, based on the dry fiber weight depending on the degree of sizing desired. Special board products, made on wet machines contain up to 30% bitumen or more. The higher ranges of such size content figures will serve to better visualize the previous reference to "filler-like" action of the particle while in the wet fibrous web.

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 14-17, 1944.

[1] Member TAPPI; Supervisor, Bitusize Sales, American Bitumuls Co., San Francisco, Calif.

Action

One of the most interesting phases of bituminous sizing is the consideration of its action and relative efficiency. Its particular attribute is that increased amount can be added to the sheet to attain exceptional degrees of sizing which is reflected principally in wet strength. This is accomplished without the usual interference to sheet formation and consequent dry strength loss. The well known paper machine difficulties in attempts at hard sizing, such as foaming, poor formation, and need for slowing down, are largely eliminated. Actual data and performance in various mills have already well established efficient operations in degrees of sizing well beyond that possible in the common usages of rosin and other beater sizing materials.

One of the best practical examples of the advantages of bituminous sizing can be seen in some of the multicylinder mills now making components for V board containers. This applies both to test liners and chipboards.

As previously explained, admixture of the size is made either at the beaters or at some later point such as the jordan head box to insure thorough mixing with the stock. Alum is subsequently added, preferably in the machine chest, both to avoid refining on the precipitated stock as well as to introduce a "time element of set" while in the chest. pH should be about 4.5. Although it is not critical it has been learned that addition of alum at the machine chest pump or machine head box may account for a decrease in retention due to shortness of reaction time.

The treated stock is used only in the filler moulds of the paper machine with rosin sized stock going to the first and last cylinders. This untreated top and bottom cover web is required principally to provide a partially absorptive surface, that will preclude glue refusal in the subsequent laminating operations. It has been learned that with 10% bituminous size solids as is used in much of this work—difficulties will result in the subsequent pasting due to low absorption of the board, if it is bituminous sized throughout all the webs.

Effect on Machine Operation

Despite the relatively high size content, machine operations are free from foaming, largely eliminating irregular, and poor formation. This reflects in a uniform and increased dry bursting strength without loss of speed. Due to both a minimum of interference with fiber formation and due partly to inherent bonding strength, there is little or no loss between the dry bursting strength of an untreated water leaf sheet and a bituminous sized sheet. This holds for size contents up to 10% which is definitely in the hard sized brackets. This is unusual as attempts in other forms of hard beater sizing frequently cause large decreases in dry bursting strength.

This preservation of bursting strength can be translated either to increased machine speed or to decreased strength requirements in the furnish, which consti tutes a definite saving in high strength fibers and costs.

One of the most important considerations is the reuse of broke and waste from this type of operation. Due to the almost complete absorption of the size by the individual fibers, it is possible to rework all the waste. There is no difficulty whatever with wires or felts as heavily concentrated contusions of raw bitumen are entirely eliminated.

In support of some of the foregoing statements, the following test date on various V boards and boxes made from production runs will be of interest, Table I. There is an overall correlation in these data, as all of the boards and boxes as well as the bulk of the testing were executed in one mill. This gives the data, factors of somewhat constant conditions both in the manufacturing as well as in the testing. All of these boards were laminated with starch and urea formaldehyde adhesives.

TABLE I.—TESTS DATA ON WEATHERPROOF V BOARDS AND CONTAINERS USING BITUMINOUS EMULSION SIZE *

BOARD TESTS	V-1-S	V-2-S	V-3-S
Weight per 1000 sq. ft., lbs.	500	390	358
Caliper	.124	.098	.106
Bursting strength	840	640	450
Type sizing in components	bituminous emulsion	bituminous emulsion	bituminous emulsion
Approx. size solids contents, %	7.5	7.5	5
Number plies	5	4	3
Moisture content, %	7.1	7.7	9.4
24 hr. immersion at 70° F.			
Weight per 1000 sq. ft., lbs.	600	500	450
Caliper	.153	.125	.132
Wet bursting strength	983	720	370
Water absorbed, %	20.0	28.0	25.6
Bursting strength loss, %	gained 17.0	gained 12.5	17.8
Delamination	0	0	0
48 hr. immersion at 70° F.			
Weight per 1000 sq. ft., lbs.	622	507	483
Caliper	.160	.126	.130
Wet burst	980	680	340
Water absorbed, %	24.4	30.0	31.6
Bursting strength loss, %	gained 16.7	gained 6.7	24.5
Delamination	0	0	0
7 day immersion at 70° F.			
Weight per 1000 sq. ft., lbs.	688	382	528
Caliper	.170	.139	.142
Wet burst	830	615	290
Water absorbed, %	37.6	36.2	42.7
Bursting strength loss, %	1.2	3.9	35.5
Delamination	0	0	0
CONTAINER TESTS			
Drop test	57	36	20
Revolving drum test	1009	525	180
Crushing test E-E	1500	770	350
Crushing test S-s	1710	1080	1210

* All of the component parts of the above laminated boards are made from multicylinder sheets, whose interior filler webs are treated with bituminous emulsion as previously described.

There is excellent correlation in the results shown in the first and second columns. The only difference in these two boards is in the number of plies used. Their components are identical.

The most striking feature is the wet strength, as reflected by the bursting strength tests after progressive periods of water immersion.

It will be noted that the wet burst in the first and second columns show very interesting increases over the original dry burst. In both the V-1 and V-2 boards the increases in wet burst when plotted against time of immersal show typical curves in which maximum wet strength occur in the neighborhood of 24 hours of immersion.

The progressive percentages of water absorption in both these cases also show a definite correlation and maximum wet strength appears within a range of between 15 and 25% absorption.

Considered in the light of their entire dependence on "internal sizing" the water absorption results are better than average. It is evident that the rate of water infiltration into the board has been reduced considerably.

It may seem surprising in these type boards to see increases in wet bursting strength beyond the dry burst in conjunction with water absorptions between 15 and 25%. This unusual behavior can be explained with fair reasonableness, knowing something of the dispersed and absorbed character of the bituminous sizing as previously described.

It is believed simply that the absorption of the size by the fibers lends waterproof qualities to the individual fibers thereby giving them a measure of true wet strength despite water infiltration into the board interstices. In other words, the progressive increases in both water pickup and increased wet caliper in the board only reflects the retarded nature of water permeation which is at a considerably less rate into the individual fiber. This helps to explain the increased wet bursting strength.

It is common phenomena to see maximum bursting strength at certain optimum moisture contents. In the above cases the resistance to water travel through the board interstices as well as to the surface of the individual fiber has been sufficient to extend the period of optimum moisture within the fibers.

It is evident, too, that caliper of the board is also important in this retardent action. For this reason, the benefits of bituminous sizing are best seen only when all of the components of the laminated board are treated.

The third column in the tabulated test data shows a V-3-S board using three components of a lower fiber furnish strength and employing less bituminous size. This is well within the V-3 strength categories and is shown chiefly for comparison. In fact, preservation of wet strength in this case is sufficiently in excess of specifications that considerably less size might have been used. Unfortunately there are no tests on this basis.

Container Tests

An interesting further comparison is seen in the standard box test results shown at the bottom of the tabulation.

Under assimilated abuse conditions, it is seen that the wet strength properties of the bituminous sized container is reflected in considerable "wet toughness" and resistance to impact. In this regard it is also interesting to note the exceptional resistance of the bituminous sized V-3 box.

The high efficiency of the bituminous sized boxes in the drop and tumbling tests is an interesting feature. This is believed due to the reduced effect of water on the fibers exposed by the formation of channels during scoring and bending of the board. Such channeling and wetting causes corner weakness unless the filler components are highly water resistant.

Before concluding on the subject of bituminous emulsion size, it is again pointed out that all the previously described operations and tests refer to practical multicylinder operations. Work on fourdriniers is now in the course of development and is expected to be in progress shortly.

Emulsified bitumen appears to offer some prospect for size press operations, but as yet no extensive practical work has been done in this field of which we have any knowledge.

Extender for Adhesives

Bituminous emulsion has also come into prominence as a low cost extender for starches, and the more expensive urea formaldehyde resins and other materials now being used in weatherproof laminating adhesives. This type of emulsion is entirely different from the previously described size. The basic bitumen is of a tacky nature and the emulsion is a fine dispersion, made stable to heat and acids required for catalyzing.

In combinations with starch-resin mixtures the bitumen first assumes the internal or dispersed phase and functions principally as an extender in the application. However, after setting it also increases the water resistance and lends plasticity to the glue line which are beneficial at scores and bends in the board.

The most common method of use is as a simple admixture to an already prepared adhesive of starch, resin, and catalyst. It can also be cooked with the starch or added to the cooked starch thereby assisting the cooling prior to addition of the resin and catalyzer.

The emulsion has a solids content of about 60% and is blended with the starch paste in the ratio of 40 to 60 volumetric parts respectively. On this basis the relation of solids in the final blend is roughly in the ratio of 1 part bitumen to 1 part starch-resin. In other words, accounting for a reduction of approximately one-half the starch and resin as normally used.

Despite the increased solids of the final blend there is no appreciable change in the viscosity from that of the original starch paste. However, the increased solids content with the "blocking" action of the colloidal bitumen, gives better "stand out" qualities and thereby increases the spread. With less water in the paste and a lower rate of application the finished board is stiffer and less "raggy" coming off the paster. The blend makes pH control less critical and although tack is somewhat faster thereby improving speed, the rate of final cure remains about the same.

This type of bitumen containing glue line (in combination with starch resin) should not be confused with the hot duplex applications. Some conception of their difference is seen in the fact that the hot asphalt application may run from 8 to 15 pounds per thousand square feet of single glue line, whereas the bituminous solids, when using emulsion, may be only 2 to 4 pounds for the same area. This difference in the amount of bituminous material employed, as well as the difference in their nature of dispersion and concentration, makes it possible to return the broke and scrap of the emulsion laminated board to the beater without difficulties on the paper machine.

One of the interesting recent findings in regard to this emulsion-starch-resin glue line, has been the reduction in corrosive action on tin cans. It is believed that this is due simply to the reduction in quantity of resin and catalyst employed, which presumably are factors in the corrosion problem.

Although the subject is quite new, this low cost adhesive type of bituminous emulsion, is now also serving as a successful extender for the new, costly type of polyvinyl adhesives. In this case the bituminous emulsion is added directly to the finished cooked polyvinyl adhesive in the relation of equal volumetric parts. The mixed blend is brought to approximate neutrality by a small addition of alum or acid. The pH range is not critical and may extend from 6 to 8.

In an equal parts adhesive blend, as is now in current use, the relation of bituminous solids to polyvinyl adhesive solids is roughly 3 to 1. This results in a very appreciable savings in costs of glue line materials.

Acknowledgement

In concluding these remarks, due thanks and acknowledgement are extended to Mr. R. A. Wilkins and Mr. H. T. Barker for their valuable assistance in this presentation.

Potentialities of Paper-Base Laminates As Compared with Other Laminates*

By Alfred J. Stamm[1]

Abstract

Plastics should continue to increase in importance in the coming postwar era as they have during the war period. Of the different types of plastics, the laminates might be predicted to have the greatest future possibilities.

A brief comparison between the cost properties and advantages and disadvantages of laminates made from glass fabric, asbestos paper and fabric, cotton fabric, paper, and wood veneer is given. A survey shows that there is no one material head and shoulders above the others. Each has its own field of usefulness. Paper, however, seems to show the broadest scope of possibilities.

Cross-banded laminated paper plastics are now being made that equal the best of the other cross-banded laminates per unit weight, with the possible exception of the newer glass fabric laminates, in all important strength properties except impact strength and yield strength in compression. The latter can be increased at the expense of a further loss in toughness.

Plastics are becoming increasingly important for the fabrication of a vast variety of articles ranging from the most insignificant gadget to moderately stressed and even highly stressed parts of airplanes. Prior to the war, plastic uses and production increased largely because of their corrosion resistance, electrical properities, appearance, and ease of fabrication. Low fabrication costs have helped to put many plastic articles on the counters of the five- and ten-cent stores.

Since the beginning of the war, more emphasis has been placed on the strength properties of plastics, because of the increasing substitution of plastics for metals. Although most of the military applications are still nonstructural or semistructural, there is a definite trend to use plastics more and more in strength requiring ways. These new requirements have been met better by laminates, in both panel and molded form, than by other forms of plastics. As a result, laminates have increased in importance and production at a remarkable rate. Paper-base laminates are high in importance among laminates. Although the amount of paper going into paper-base plastics is only a fraction of a per cent of the total production it is significant that the amount going into plastics increased several fold during the past year.

It should be of importance to analyze the reasons for the increased use of paper-base laminates, and compare their properties with those of other laminates.

By far the most important laminate from a production and utilization standpoint is plywood. Plywood is not generally classed as a plastic laminate because only relatively small amounts of glue or resin are used for assembling the plies, and because the glue or resin is almost entirely concentrated at the glue line. The term plastic airplane has, however, been applied quite frequently during the last few years when referring to one of the molded plywood airplanes. Resin treated laminated woods in both the uncompressed and compressed forms, however, should be truly considered as laminated plastics.

Up to the present time, fabric-base laminates have perhaps more varied military applications than have paper-base laminates. Asbestos-base laminates, in the forms of both asbestos paper and fabrics, have found only special applications. Plastic laminates made from glass fabric, and a combination fabric with glass in one direction and merely enough cotton thread in the other to hold the glass fiber in place have recently created considerable interest because of their excellent strength properties. Their use so far, however, is quite limited. The glass laminates have been made with both phenolic resins and the newer contact resins, such as Columbia CR39, Laminac, and Plaskon 900.

Costs

Table I gives a comparison between the costs of the different base materials, the average amount of phenolic resin used in making the laminates, and the cost of the raw materials per pound of laminate. It is of interest that paper is considerably cheaper than most of the base materials and is as cheap as the cheapest species of veneer. Further, paper requires less resin than any of the other laminates with the exception of wood. The fact that paper is as cheap as veneer on a weight basis may be surprising to many because of the relatively simple processing which veneer undergoes. This is primarily because veneer must be cut from large, quality logs that are both expensive to procure and expensive to ship and handle. Even though wood pulp represents only about a 45% yield of the original wood, the veneer yield of quality material is rarely much better than this. It is thus obvious that paper-base laminates have an appreciable advantage over all other laminates with the exception of wood on a cost basis per unit weight of raw materials. The slight advantage of wood, however, can be expected to decrease with time as quality logs for cutting veneer become more difficult to obtain.

Fabrication Factors

Fabrication of the various laminates involves impregnation, drying, cutting, assembling, and pressing. Paper normally used in laminates can be impregnated and dried more rapidly per unit length than the other laminating materials, but a greater length must be impregnated and dried per unit weight. Impregnating costs hence should not vary appreciably between the different laminates. Assembly costs may be slightly greater for the paper than for the other laminates because more sheets are involved per unit wight. If

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 14-17, 1944.

[1] Principal Chemist, Forest Products Laboratory,[3] Forest Service, U. S. Department of Agriculture.

[3] Maintained at Madison, Wis., in cooperation with the University of Wisconsin.

this is done mechanically, however, the difference should not be great.

The various laminates are pressed at quite different pressures. Plywood assembly pressures using hot-press phenolic glues range, in general, from 150 to 250 pounds per square inch, the lower pressures being used for the softwoods (conifers), such as Douglas-fir, and the higher pressures being used for the hardwoods (broad-leaved woods), such as birch. Impreg laminates can be made at the same pressures. High-density compreg requires pressures of 1,000 to 1,200 pounds per square inch when nonadvanced water-soluble resins are used, and 2,500 to 3,000 pounds per square inch when advanced spirit-soluble resins are used. With the newer low-pressure phenolic resins, paper-base laminates can be made with practically maximum specific gravity (1.35 to 1.40) and strength properties under pressures as low as 100 pounds per square inch. Fabric-base laminates and lignin laminates, however, require considerably higher pressures to obtain maximum specific gravity and to void delamination. In general, fabric-phenolic laminates and lignin-plastic laminates are made at pressures of 1,000 to 2,000 pounds per square inch. The same is true for asbestos-base laminates. Glass fabric is laminated with phenolic resins at pressures of 100 pounds per square inch or less. It is laminated with the new contact-pressure resins under practically negligible pressures. Ability to lower the laminating pressure is not of great importance in making flat panels, but it is of extreme importance in molding.

Comparison of Various Fiber Bases

The specific gravity, water absorption, and strength properties of laminates made with different fiber bases are given in Table II, together with the corresponding values for aluminum alloy 24ST used extensively in airplane construction. The paper-base, cotton-fabric, lignin-sheet, and compreg laminates when compressed to practically the ultimate compression, all have about the same specific gravity—about half that of aluminum. The glass- and asbestos-base laminates have somewhat higher specific gravity values than do the other fiber-base laminates, due to the heavier filler.

No systematic differences exist between the water-absorption values. Differences in the degree of precure of the resin and its distribution throughout the structure cause a greater difference in water absorption than do differences in the fiber base.

Table II shows that paper-base laminates compare favorably with the best of the fiber-base laminates in practically all specific strength properties. The properties given in column 1 for Mitscherlich high-strength paper represent minimum values that can be readily attained, whereas values in the other columns are the averages for specimens tested. Values 20% greater than those given in column 1 are frequently obtained. The only specific strength property for this paper-base laminate that is exceeded by the cotton-base laminates is ultimate compression. Where the impact strength is not of vital importance, the compressive-yield strength can be increased by about 60% at the expense of toughness, by impregnating with a non-advanced water-soluble resin instead of the conven-

TABLE I.—COMPARATIVE MATERIAL COST OF DIFFERENT TYPES OF PHENOLIC RESIN LAMINATES

Base Material	Cost of Base Material per Pound	Resin [1] Content of Laminate	Total Material Cost [2] of Laminate per Pound
	$	%	$
Douglas-fir veneer [3]	0.07	13 [4]	0.10
Do	.07	23 [5]	.11
Yellow birch veneer [3]	.12	10 [4]	.13
Do	.12	23 [5]	.15
Kraft paper	.06	35	.13
Mitscherlich sulphite paper	.07	35	.14
Cotton fabric (coarse weave)	.30	45	.28
Cotton fabric (fine weave)	.40	45	.33
Asbestos paper	.30	50	.28
Asbestos fabric	.80	50	.52
Glass fabric	2.00	50	1.12

[1] On the basis of the total weight.
[2] On the basis of the phenolic resin costing $0.25 per pound (100% solids).
[3] Select, rotary cut, $\frac{1}{10}$-inch.
[4] Plywood.
[5] Impreg or compreg.

TABLE II. PROPERTIES OF CROSS-BANDED, PHENOLIC-RESIN LAMINATES WITH DIFFERENT FIBER BASES

Property	Base Material: Mitscherlich High-Strength Paper [1]	Kraft [1] Paper, NEMA Grade XX	Cotton [2] Fabric NEMA Grade C	Cotton [2] Fabric NEMA Grade L	Asbestos [3] Paper NEMA Grade A	Asbestos [3] Fabric NEMA Grade AA	Glass [4] Fabric and Cotton Alternate Laminates	Lignin [5] Plastic Sheet	Birch [6] Plywood	Birch [6] Compreg	Aluminum [4] Alloy 24ST
Specific gravity	1.38	1.34	1.34	1.34	1.8	1.8	1.68	1.38	0.8	1.33	2.8
Water absorption (24 hr., ⅛ in. thick), %	2 to 4	1.3	1.9	.8	1.0	1.0	.....	0.7-4.5	.....	1.0	0.0
Tension (specific): [7]											
Ultimate, p.s.i.	18,200	11,400	9,000	10,800	6,400	6,400	21,300	8,700	16,400	11,000	22,100
Modulus of elasticity, 1000 p.s.i.	1,600	1,100	840	880	500	720	1,200 [8]	1,100	1,750	1,660	2,400 [8]
Compression (edge, specific): [7]											
Yield strength, p.s.i.	.....	6,600	5,100	4,800	.....	.....	9,100	.....	.....	5,900	14,300
Ultimate, p.s.i.	13,100	17,500	20,600	18,800	5,500	11,700	13,900	14,500	7,100	16,300	22,100
Modulus of elasticity, 1000 p.s.i.	1,400	1,400	1,050	1,130	280	280	1,270 [8]	.....	1,750	1,660	2,400 [8]
Flexure (specific):											
Modulus of rupture, [9] p.s.i.	13,700	9,500	10,300	10,900	6,600	7,500	12,600	9,400	.....	11,000	7,900
Modulus of elasticity, [10] 1000 p.s.i.	770	650	500	500	.....	.....	560	.....	2,700	880	470
Impact (notched Izod):											
Face, ft.-lb./in. notch	4.0	2.1	2.8 [11]	4.1	4.5	.....	13.5	0.8	.....	.....	22
Edge, ft.-lb./in. notch	.7	.6	1.9 [11]	1.9	2.0	.....	6.0	.....	.....	.....	22

[1] Data of Consolidated Water Power and Paper Company, March 17, 1943.
[4] Data of Oberg, T. P., Schwartz, R. T., and Shinn, D. A., Army Air Forces, Modern Plastics, April, 87 (1943).
[5] Data of Caldwell, L. E., Westinghouse Electric Manufacturing Company, Modern Plastics, August, 82 (1943).
[4] Data of Sang, H., and Fields, P. M., Naval Aircraft Factory, Modern Plastics, October, 107 (1943).
[6] Plastics catalog (1943).
[6] Data of Forest Products Laboratory, Wood Aircraft Fabrication Manual, July 1942.

[7] Strength expressed on specific basis; that is, strength divided by the specific gravity.
[8] Secant modulus which is somewhat lower than the normal tangent modulus.
[9] Modulus of rupture divided by the square of the specific gravity as this property varies with the square of thickness when comparison is on equal weight and width basis.
[10] Modulus of elasticity in bending divided by the cube of the specific gravity as this property varies with the cube of the thickness when comparison is on equal weight and width basis.
[11] Values more than twice as great have in some instances been reported.

tional somewhat advanced spirit-soluble resin. This will also lower the water absorption to about 1%.

It has been rumored that glass-fabric laminates with strength properties considerably higher than those given in the table have been attained. The high cost and, at present, small production facilities, however, seem to limit the use of this type of laminate to very special purposes. The greatest virtue of glass laminates is in their extremely high impact strength.

Impact strength is the poorest property of paper-base laminates. In this respect paper-base laminate is superior only to the lignin laminate as shown in Table II. Other forms of lignin laminates, however, are also superior to the paper-base laminate in this property. Improving the impact strength of paper-base laminates without seriously impairing other properties is the biggest research job now confronting paper and resin chemists interested in laminates. This seems to involve making a more ductile product without too serious a loss in modulus of elasticity.

On a specific strength basis the properties of aluminum alloy 24ST are, in general, not much better than the fiber laminates. The superiority of aluminum rests largely in its compressive-strength properties and in its impact strength.

Ordinary plywood ranks high on a specific strength basis with the other laminates except in ultimate compression and excels in specific flexural properties because of the low specific gravity.

Most of the other physical properties of the highly compressed laminated plastics are quite similar. The electrical properties depend more on the absence of electrolytes from the filler and resin, the degree of precure of the resin, and the distribution of resin throughout the structure of the laminate than on the choice of the laminate base. Neither the coefficients of thermal expansion nor the thermal conductivity values of the different highly compressed laminates differ appreciably. The burning rate of the laminates with inorganic bases, such as the glass and asbestos, is *nil*. The burning rate for all the laminates with an organic filler is slow; in fact, they are self-extinguishing. The resistance to continued heating is also higher for the laminates with inorganic fillers. Glass-fabric laminates, impregnated with phenolic resin, will stand continued heating at 480° F.; asbestos laminates will stand 250° to 300° F., while paper and cotton-fabric laminates will stand only a temperature of 212° to 250° F. When heat resistance is sought, the laminates with inorganic fillers should be used.

It appears, from the analysis of the properties of laminates made with different fiber bases, that paper-base plastics deserve the important place they are finding among laminates. Although they may have to relinquish some of their present war-time uses to metals, their excellent properties and relatively low cost will assure them many future industrial and structural uses. Further reductions in fabricating costs should assure them a place in house construction and furnishings. Even at present prices they appear promising for facing of the better grades of plywood. Because of the better dimensional stability and freedom from face checking of plywood faced with a paper-base laminate, this material should find extensive outdoor use.

Hydrolyzed-wood laminates and combined lignin-and-paper laminates also show great promise as competitive building materials. Although their properties are, in general, somewhat inferior to paper-base phenolic laminates, their potentially lower cost will make them desirable for many uses. Plastic laminates made from paper mill products thus appear to have a real future in store for them. This future, however, will be attained only by continual research and improvement and cheapening of products, for those sponsoring other forms of laminate and the metals will extend themselves to the utmost to place their products ahead of laminates produced from wood and wood products in all industrial applications.

Proposes a New Forestry Council

In an address by the Hon. John Bracken under the auspices of the Progressive Conservative Party of Canada, delivered at Campbellton, N. B. on May 15 the speaker said in part:

"If the Progressive Conservative Party is given a mandate at the next election we propose to establish a separate technical branch of the Department of Mines and Resources to deal with forest matters or a Ministry of Forests. In any event, we propose to set up a National Forestry Advisory Council. The new authority would join the Dominion, the Provinces and the Lumber Industry in a common endeavor to develop a national forest policy. The object would be to conserve and manage our forest resources in a manner which would give the widest and most lucrative employment to as many Canadians as possible and would enable us, by adopting efficient methods and utilizing the forest by-products to compete successfully in the world market. We should, at the same time, regulate cutting by operators and plan reforestation in such a way that our forest estate will not be depleted while soil and water conditions would be favourably affected. Farming and fisheries are both affected by the preservation of properly wooded areas; so are the fur industry and the tourist trade—all of which are vitally important to the welfare of the country."

Stocks of Talc

Total stocks of ground talc, according to "Facts for Industry," are equal to somewhat more than three months' supply. Mill stocks of steatite are equal to less than a month's shipments, but this is normal even in peacetime. Stocks held by manufacturers of steatite products have been built up to a seven or eight months' supply, while the Government stockpile of steatite talc has been built up to a four months' supply. Storage space has been a limiting factor in the accumulation of consumer inventories, particularly in the East.

The paper industry used approximately 11% of the total ground talc consumed, with the over-all trend during the year being slightly downward due to the reduction in volume of paper production, but in general, even in this industry the position of talc remained steady because increased amounts were used as fillers to counter-balance the lack of wood pulp and other ingredients. Food containers probably required the largest bulk of the talc used by the paper industry.

J. H. Perry To Be Technical Engineer

James H. Perry has been appointed technical engineer in the pulpstone division by Norton Company, Worcester. Mr. Perry, who has had many years experience in the pulp and paper industry, will be responsible for engineering and sales work on the Norton pulpstone.

Stream Pollution Problems of the Tennessee Valley*

By W. G. Stromquist[1]

Abstract

A survey conducted by the Tennessee Valley Authority in cooperation with other agencies reveals that more than one-half of the pollution load originates from a small number of pulp, paper, and rayon plants. The Authority is interested in stream pollution as the conditions are changed from running streams to a series of artificial lakes and in providing clean water for domestic and industrial water supplies, fish, and recreation. The Authority's policy is one of cooperation with state, other Federal agencies, and industry in a program of pollution abatement and control. One instance of cooperation with a paper industry is cited.

The construction of dams on the Tennessee River and its tributaries for the purpose of flood control, navigation, and production of power has created certain problems resulting from this development. For example, the creation of artificial lakes provides ideal breeding conditions for the malaria-carrying mosquito; and the Tennessee Valley Authority is carrying out an extensive malaria control program to conform to the regulations of state health departments governing impoundage of water. Other problems are the control of pollution by domestic sewage and industrial wastes and determinations of the effect of the transition from river to reservoir conditions, as well as the effect of water level management for water control and utilization, upon the self purification capacity of the river system.

Following a conference in May, 1935, with representatives of the U. S. Public Health Service, U. S. Geological Survey, state health departments, and the Authority, the state health officers of the seven Valley states requested the Authority to initiate a stream sanitation survey. In this survey, the Authority would act as coordinating agency in cooperation with the Public Health Service and the state health departments to secure the basic data on existing conditions on which a sound, practical, and reasonable program of stream pollution abatement and control could be developed.

Surveys

Surveys have been made of four sections of the Tennessee River having the larger population centers and of the major tributaries. These surveys have, in general, consisted of weekly samples collected for a period of 8 to 12 months at several points in sections where domestic sewage or industrial wastes are discharged. In addition, a survey was made of manufacturing plants; and essential data were obtained from those which discharged liquid waste into the stream. The industries were very cooperative in this survey. Special studies were made to determine the characteristics and volume of wastes from typical plants of several types of industry, and basic data on the pollution units were obtained on several types of waste for which these data were not available elsewhere. These surveys were coordinated with the Ohio River Pollution Survey, supplementing it without duplication of effort.

Briefly summarized, the Tennessee River system received domestic sewage from a population of 605,000 as of the 1940 census. Comparatively little progress has been made in the treatment of domestic sewage, but it is estimated that treatment plants reduce the effect of the sewage to that of a comparative population of 560,000. With respect to industrial wastes, it was found that 249 manufacturing plants were discharging wastes into the streams equivalent in its pollution load to the sewage from a population of 1,300,000, or approximately 2.5 times the load from domestic sewage. More than one-half of the total pollution load, including domestic sewage, is contributed by less than a score of pulp, paper, and rayon plants. Since that time, the increased production of many plants and establishment of new wartime industries have increased this load to one estimated to be equivalent to domestic sewage from over 2,300,000 people.

In general, the Tennessee River system is not at the present time seriously polluted; however, certain sections are polluted to the extent that it is difficult to treat the water to make it suitable for domestic and industrial purposes and some sections are so grossly polluted that they are, in effect, open sewers in which septic conditions exist under normal stream flow conditions.

Why should the Tennessee Valley Authority be concerned with stream pollution? The Tennessee Valley Authority Act provides not only for development of the Tennessee River for navigation and flood control, but for the general development of the Valley and its resources, one of the most fundamental of which is water.

Public and Industrial Water Supplies

The Tennessee River system is the source of a large number of domestic and industrial water supplies. Based on the 1940 census, of a population of 871,000 served with public water supplies in the Tennessee Valley, 395,000, or 45%, obtain their water from polluted surface supplies. Several communities are finding their present ground water supplies inadequate, so that it can be expected that the proportion of persons served with polluted surface waters will be increased materially in the not distant future. This shows a definite need for treatment of domestic sewage and industrial wastes. A public water supply should not be faced with an undue burden in difficulty and expense of treatment by reason of excessive upstream pollution. Some public water supplies in the Tennessee Valley have experienced periods when in spite of extreme effort and excessive use of chemicals the water could not be made free of very objectionable

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 14-17, 1944.

[1] Principal Sanitary Engineer, Health and Safety Department, Tennessee Valley Authority.

taste, odor, and color and, at the same time, be given adequate disinfection. These extreme conditions, incidentally, have been caused mainly by paper mill wastes.

From the surveys, fairly complete records of the chemical characteristics of the waters in the Tennessee River system have been obtained, more valuable by virtue of samples having been collected over a sufficiently long period of time to show the variations from season to season and under various conditions of stream flow. However, a manufacturer seeking a location for a new plant would not be safe in judging the suitability of the water for his processes solely on the usual mineral analysis without considering the additional data obtained from biochemical examinations. The water might be satisfactory from a standpoint of hardness and other characteristics but contain such a heavy load of organic pollution that it could not be rendered suitable for certain manufacturing processes at a reasonable cost. But too often, a manufacturer who insists on having clean water for his use does not hesitate to discharge the wastes from his plant to complicate the problems of the downstream users.

Recreation Facilities

The series of TVA reservoirs which have been aptly named the Great Lakes of the South have vast recreational potentialities which have been developed to considerable degree in some of the earlier reservoirs. However, the major development has been postponed for the duration. There will be boat landings, boat docks with complete service provided, group camps and cabin sites developed which will serve not only the people of the Tennessee Valley, but people from far and wide. The interest which has already been aroused is indicated by the fact that about 1,800 boats were placed in the Norris reservoir within four years and 700 in the Chickamauga reservoir within 3 years after they were filled. These include all types from small outboard motor boats to large luxurious cabin cruisers. They have provided business for boat and equipment manufacturers in many sections of the country. An estimated 2,700,000 people visited eleven TVA dams in 1941. Great interest in fishing has developed. The first summer following the filling of the Guntersville reservoir, one hardware store in Scottsboro, Alabama, a town of about 2,800 people, sold more than 2,000 cane fishing poles; and three other concerns in the town did approximately the same business.

In discussing fishing in relation to stream pollution, the general concept is that of a sports fisherman trying his skill against bass, trout, or other game fish. While the development of sport fishing is important in the Tennessee River system, it is not the complete picture. In the last 2 or 3 years, an important commercial fishing industry has had its initial development, particularly in the Wilson, Wheeler, and Pickwick reservoirs in northern Alabama. In the Wilson reservoir alone, 25 commercial fishermen took nearly 600,000 pounds of spoonbill catfish between August, 1941 and July, 1942, representing an average income of $1,680 per fisherman for the 11-month period. The money realized from the sale of these fish amounted to almost $3 per acre for a year for the entire area of the Wilson reservoir. From November, 1942 to September, 1943, snag line fishing in the Wilson, Wheeler, and Pickwick reservoirs resulted in a catch of about 956,000 pounds. This helps to raise the economic level of the area, but of far greater importance is the fact that it has yielded a considerable quantity of meat at a time when more meat is needed and is of definite value to the war effort. The Authority is conducting experiments in processing rough fish for sale as canned, frozen, and smoked fish, and recovery of by-products; such as fish meal. The results to date indicate the possibility of development of a fish-processing industry in the Tennessee Valley. It has been proposed that fishing regulations be adjusted to permit the seining, under proper control, of rough fish. It is to be emphasized that the control of pollution for the production of fish in the Tennessee River system is not merely for the benefit of a few—though a rapidly increasing number—sport enthusiasts, but to permit the development of an important food industry.

Sanitation Program

The Board of Directors of the Authority has authorized a stream sanitation program which provides for further studies of stream conditions, particularly with relation to the changes resulting from impoundments. It also provides for cooperation with other Federal agencies, state and local agencies, municipalities, and industries in a program of stream pollution abatement and control. It is the Authority's attitude that while sound and reasonable legislation is desirable and may be necessary in extreme cases, the solution with respect to pollution by industrial wastes will come when industry recognizes its responsibility and makes an earnest effort to bring about corrective measures. This should be done to the greatest possible degree by recovery and utilization of wastes and reducing to an absolute minimum the quantity of wastes which will require treatment before being discharged into a stream.

There are two extreme viewpoints on the question of stream pollution. On the one hand, there is the enthusiast who feels very strongly that all streams should be restored to their pristine purity. On the other extreme is the industrialist who thinks that a stream is there for his convenience to carry away material which he cannot otherwise utilize. To satisfy the first, it would be necessary to return to pioneer days when a man could provide his family with meat by shooting a bear or deer from his cabin door with no worry about ration points. At the other extreme, there is a flagrant disregard of national good housekeeping and common decency. There is a reasonable middle ground.

The Authority is keenly interested in the recently organized National Council for Stream Improvement of the Pulp, Paper, and Paperboard Industry. The program which it has outlined is sound and inclusive and proposes to bring to bear upon the problem all available resources both within and without the industry. It is hoped that in this case the critical will not have reason to say that every few years a new committee is formed to do what a previous committee should have done. The Authority has offered the Council its cooperation to the fullest extent of its legal and financial limits. It would be presumptuous on the Authority's part to assume that it can solve a problem on which the association has worked for years. However, it is often helpful to bring in a fresh viewpoint, and two pairs of eyes can often serve better than one pair by bringing the object into a new perspective instead of merely seeing it twice.

A concrete example of such cooperation can be cited. The Mead Corporation operates a paper board

mill at Harriman on the Emory River, a tributary of the Clinch River which, in turn, is a tributary of the Tennessee River. After the Watts Bar Dam on the Tennessee River was completed, the backwater extended some distance above Harriman in the Emory River. It was found that under certain conditions the local pollution including the paper mill wastes backed up to the intake of the water plant which is operated by a private utility. Although the Authority has no legal liability, it has cooperated with the Mead Corporation and the water company in attempting to solve this problem. The trailer laboratory has been at Harriman for continued periods on several occasions and collaborated with the Mead Corporation on plans for relieving the immediate problem with respect to the Harriman water supply, and also in the long-range problem of more complete stream improvement. Only recently, the research department of the Mead Corporation carried out some experiments which gave promise of at least a partial solution of this problem which they wished to discuss with the technical staff of the Authority before going further. It was desirable that further tests be carried out at the paper mill; and the trailer laboratory which is equipped for making biochemical examinations not included in the routine laboratory work of a paper mill was sent to Harriman to assist in these studies. We of the Authority are highly pleased over the cordial relationships which have developed between the Mead Corporation and ourselves.

Paper Industry's Problem

The following suggestions are made to stimulate discussion relative to the action to be taken by the pulp and paper industry. As already stated, we are in thorough accord with the program proposed by the National Council for Stream Improvement as a plan; but in order to produce results, the plan must be executed with vigor. We are confident that the majority of the companies will subscribe to this program and willingly pay their proportional part of the cost of the proposed research. However, there are a few who, on receiving a blank on which to report data on their production and to sign on the dotted line, will say; for example, "My production last year was 59,430 tons, at 3 cents per ton that will be $1,782.90; and we do not want to pay that." The paper industry should be brought in 100%; and some few plants will need a personal visit by an executive who has the respect and the confidence of the industry and who can sell the idea of this program and the benefits which will be derived from it with relatively small cost to each individual firm. While this might require some personal sacrifices, it is certain that the paper industry has many men of the type who are willing and able to put over such a program. A lesser man than the high executive would not carry the necessary prestige.

There are those who say that nothing can be done toward waste recovery and utilization for the duration. We believe it more sound to say that now is the time for making every effort to protect our natural resources. Strenuous campaigns are carried on for saving waste paper. When the private citizen is asked to save his old newspapers and carry them to some point where they can be returned to the paper industry, should not the paper industry also try to save those materials which are thrown away before they are even made into paper?

The people of the Tennessee Valley are becoming increasingly conscious of the polluted condition of its streams and will insist that something be done about it. The paper industry will do well to recognize this; and if it makes a definite attempt toward correcting present conditions, it will find that various agencies and organizations in the Tennessee Valley are ready, eager, and, we believe to a certain degree, able to cooperate with the industry, certainly to the extent of using their influence to avoid drastic legislation. In Tennessee, for example, a stream pollution bill was introduced in the State Legislature early in 1943. It resulted in a resolution that the Governor should appoint a committee to study the problem and report to the next session of the State Legislature with definite recommendations. This committee consists of heads of the state departments of public health, conservation, and agriculture, together with representatives of the public and of industry. The committee has been appointed and organized and is taking its assignment very seriously. It is reasonable to expect that the next State Legislature of Tennessee will enact a stream pollution law. Other Valley states are considering similar legislation, and industry will do well to anticipate such controls.

The paper industry is dumping into the Tennessee River system a pollution load equivalent to the raw sewage from more than 1,000,000 people. The water works operator who must have a water which can be made safe and potable; the manufacturer who requires clean water for his processes; the sports fisherman who likes to fill his creel with trout or bass; the commercial fisherman who earns his living by providing us with food; the many thousands, not only in the Tennessee Valley, but in your own home states and home towns, who enjoy the recreational facilities and the scenic beauty of the Great Lakes of the South ask this question, "What is the paper industry going to do about it—and when?"

Understanding and Working with Others

The Technique of Handling People is the title of the latest book by Donald A. Laird, Industrial Consultant and Eleanor C. Laird, Research Librarian, and published by McGraw-Hill. Dr. Laird was formerly professor of psychology at Cornell. (139 pages 5¾ x 8½). In this book he gives eleven rules for getting along with people. Among the subjects covered are the following: How to win cooperation and to clear up troubles, Control of others, How to enthuse others, overcome opposition, mobilize ability, win appreciation, cultivate loyalty, secure best efforts, generate harmony, Lead or Drive? This book should be read by every foreman and executive responsible for the activities of others. Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 E. 42nd street, New York 17, N. Y., at $1.75 per copy.

Bagley & Sewall Co. Builds

Watertown, N. Y., May 22, 1944—The Bagley & Sewall Company has started construction of a large new warehouse which will be of concrete, steel and brick construction, 126 feet by 200 feet and 30 feet high. About 100 men are being employed on the project under the supervision of Charles Boynton, who came to the concern several months ago. A new siding is also being installed which will give direct transportation service to the plant. The concern is unusually active with war orders and many inquiries for new machines for postwar use are being received.

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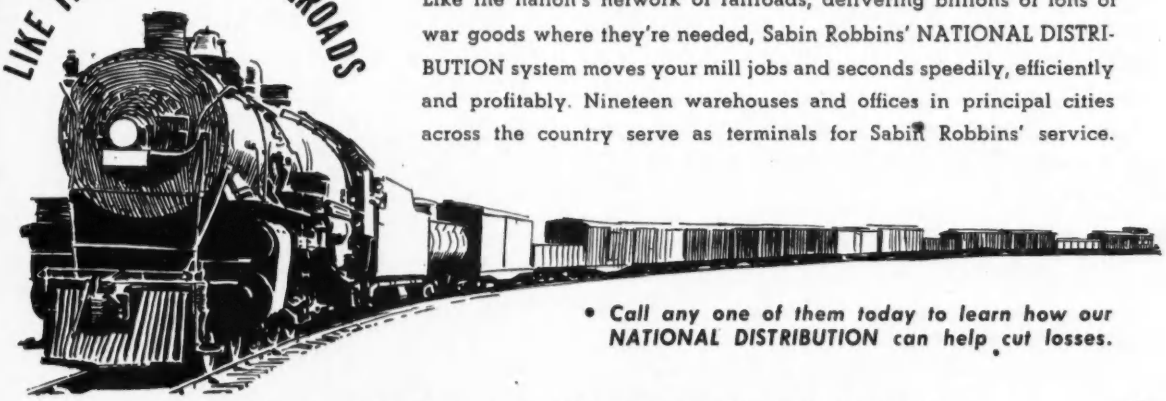

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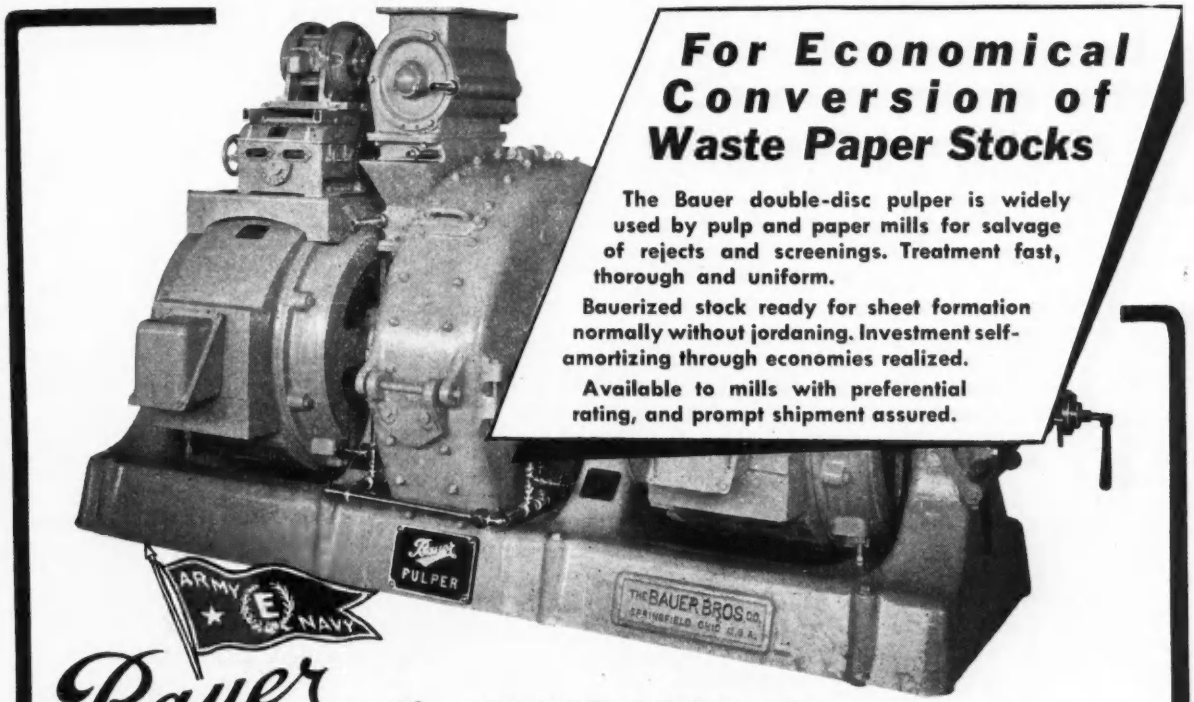

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New York Paper and Pulp Market Review

Less Kraft Wrapping and Bag Paper Expected For Civilian Use In Future — Pulp Output Most Critical In Northeast Area — Court Decision On OPA Brokerage Provisions Unfavorable To Dealers.

Office of the PAPER TRADE JOURNAL.
Wednesday, May 24, 1944.

Wholesale demand for some types of paper and paper board continues in excess of supply. Concern is expressed in current reports received from some of many manufacturers' representatives, jobbers, and general paper merchants, relative to the future trade supply of paper. Government requirements for all purposes are expected to reach the peak in the current second quarter. While some paper items will continue in scant supply for some months, pulp allocations indicate that the over-all supply of paper will be adequate to meet civilian needs. The real pinch will be felt in kraft paper and board, especially in wrapping and grocery bag papers.

Increasing needs of the war for some grades of sulphite wood pulp will also reduce the civilian supply of sulphite wrapping papers. It is expected that the tonnage of wood pulp used in the manufacture of sulphite wrapping papers may be curtailed to about 10,000 tons a month. In all other types of paper, the present WPB schedule indicates an equitable apportionment of paper for the home front.

Paper production for the week ended May 13 was estimated at 89.6%, compared with 91.1% for 1943, with 97.8% for 1942, with 98.6% for 1941, and with 91.7% for the corresponding week for 1940.

Paper board production for the week ended May 13 was 95.0%, compared with 96.0% for 1943, with 82.0% for 1942, with 84.0% for 1941, and with 76.0% for the corresponding week for 1940.

Wood Pulp

Current reports indicate that pulpwood receipts from the Northeast area is the most critical. Inventories may decline to a supply of 200,000 cords next month. This may result in reduced production of wood pulp in several mills and some plants may be forced to shut down in the third quarter, providing more wood is not available. Canadian imports were up 20% in the first quarter and this was an important factor in keeping Northeastern mills in operation during that period.

Total U. S. production of wood pulp in the first quarter was 2,435,000 tons, compared with 2,303,000 tons in the first 1943 quarter total imports were 263,000 tons in the first 1944 quarter, compared with 305,000 tons in the first 1943 quarter; total exports were 47,000 tons in the first 1944 quarter, compared with 56,000 tons in the first 1943 quarter; total U. S. consumption for the first 1944 quarter was 2,683,000 tons, compared with 2,698,000 tons in the first 1943 quarter.

Rags

Mill buying of new cotton cuttings continues steady and in good volume. Supplies are quite widely reported as inadequate to meet full mill demands. The market is strong, with prices maintained at ceiling levels.

Roofing grades of old cotton rags are active. Demand of roofing mills is reported in excess of supplies at this date. All grades of old rags are active. Prices are firmly maintained at ceiling levels.

Old Rope and Bagging

Mill demand for old Manila rope is heavy and supplies are inadequate to meet mill requirements for this hard fiber for the manufacture of strong papers essential for war uses. Other grades of rope, twine and strings are active.

The scrap bagging market is slow. Trading is very limited in volume and prices are soft.

Old Waste Paper

Mill demand for paper stock is active with all prices strong at ceilings.

Concern among paper stock dealers has been created by the recent decision of the U. S. Emergency Court of Appeals, which held that the brokerage provisions of the OPA Maximum Price Regulation No. 30 are discriminatory and ordered the OPA to amend that schedule to conform to the ruling of the court.

Twine

Demand is active for all grades of obtainable twine. Prices are firm. Despite the relative lack of strength and poor tying quality of paper twines, many consumers are extensive users of this substitute for the strong fiber twines formerly used and not now available for most civilian uses. Cotton twines are in strong demand.

Lobdell Roll Products

A century of progress in the manufacture of paper mill equipment is briefly presented in a new catalogue issued by the Lobdell Company, Wilmington, Del. It describes the company's well known chilled iron calender rolls, special alloy and plated rolls, and the Lobdell machine calender stacks.

The development of special machines for finishing rolls has resulted in the modern geared-head, V-belt driven Lobdell Roll Grinding Machine, the largest of which will grind rolls up to 42 inches in diameter and a face of 246 inches.

As no instrument was available for the detection of the extremely minute variations permissible in paper calendering rolls, Lobdell engineers designed and built the first micrometer roll caliper. These instruments are now carried in stock in three sizes for measuring rolls from 7 inches to 42 inches in diameter, with special sizes built to order.

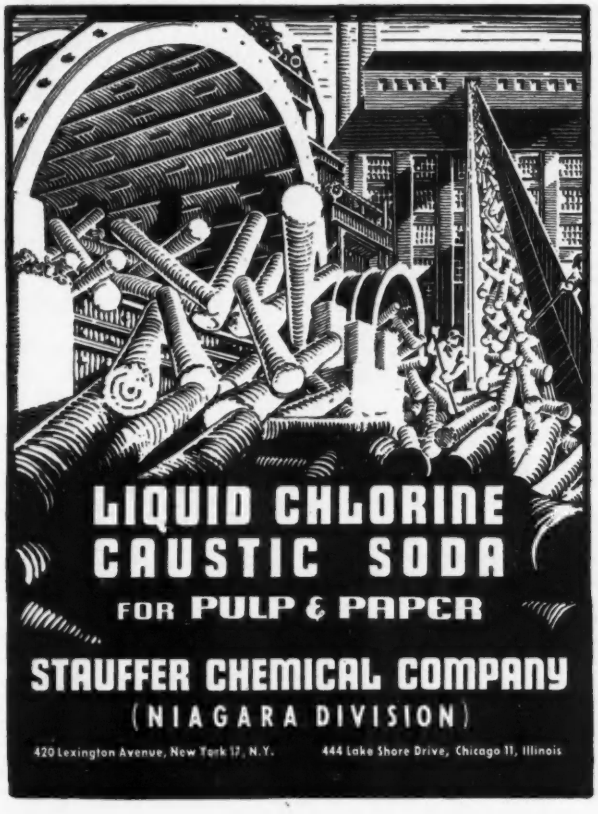
To Be Forester for MacMillan Co.

H. R. MacMillan announced the appointment of John Douglas Gilmour, forestry engineer, as forester for the H. R. MacMillan Export Company Limited, Vancouver, B. C. Mr. Gilmour is a graduate at the University of British Columbia and has held forestry positions with the Canadian Pacific Railway, British Columbia Government, and the Northcliffe-Rothermere pulp and paper interests in Eastern Canada.

☆ Benjamin Franklin's curiosity about lightning and his development of a coal stove were typical of the Yankee spirit of ingenuity which has made America great. Call it research if you like. Lindsay desires by sincere effort to contribute materially to the improvement of Fourdrinier wire cloth and of the paper that is formed on it.

THE LINDSAY WIRE WEAVING COMPANY
Serving the Paper Industry Since 1903
14001-14299 ASPINWALL AVE., CLEVELAND 10, OHIO

Lindsay **WIRES**
FOR PAPER MILLS



LIQUID CHLORINE
CAUSTIC SODA
FOR PULP & PAPER

STAUFFER CHEMICAL COMPANY
(NIAGARA DIVISION)

420 Lexington Avenue, New York 17, N.Y. 444 Lake Shore Drive, Chicago 11, Illinois

ON WHICH

of these 10 jobs can Oakite cleaning save money for you?

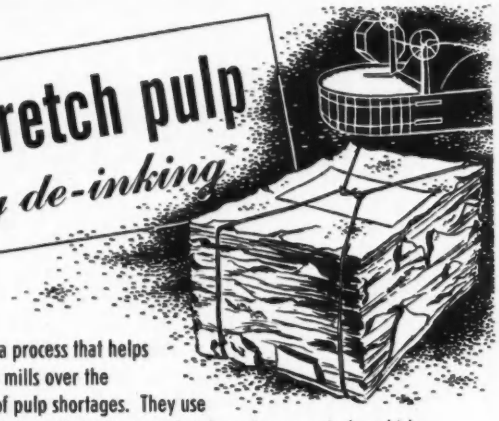
1. **Cleaning screen plates, beaters, save-alls**
2. **Removing slime accumulations from piping**
3. **Washing felts on or off the machine**
4. **Cleaning cylinder and Fourdrinier wires**
5. **Removing pitch and lime-scale from wires**
6. **De-scaling vacuum pumps, heat exchangers**
7. **Cleaning rubber-covered suction press rolls**
8. **Steam cleaning equipment before repair**
9. **Washing floors, walls, windows, sky lights**
10. **Deodorizing and cleaning washrooms, etc.**

Saving time, conserving man-power, establishing economies, making equipment last longer . . . those are the results that specialized, fast-working, SAFE Oakite cleaning materials and methods are providing on these 10 jobs in many mills. Write for NEW, 28-page, FREE booklet giving complete story on how you, too, can benefit with Oakite cleaning.

OAKITE PRODUCTS, INC., 48A Thames St., NEW YORK 6, N. Y.
Technical Service Representatives in All Principal Cities of the United States and Canada

OAKITE MATERIALS · METHODS · SERVICE — *Buy Bonds for Victory* — **CLEANING** FOR EVERY CLEANING REQUIREMENT

stretch pulp *by de-inking*



Here's a process that helps to take mills over the hump of pulp shortages. They use Metso Sodium Metasilicate to de-ink waste paper stocks, which results in a cleaner pulp as well as a whiter pulp. One of our mill customers turns out a smooth sheet with a high quality feel*, which is made from 5% virgin pulp and 95% de-inked stock.

Metso with its quick wetting, effective dispersing and emulsifying powers can improve your results in de-inking waste paper stocks (it works on rotogravure and magazine stocks too). Send for full particulars now. *Sample on request.

PHILADELPHIA QUARTZ COMPANY • DEPT. B, 121 S. THIRD ST., PHILA. 6
Sodium Metasilicate U. S. Pat. 1898707

P Q SILICATES OF SODA

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, May 24, 1944.

BLANC FIXE—Quotations on blanc fixe continue firm and unchanged. Demand is moderate. The pulp is currently quoted at $40 per ton, in barrels, at works; the powder is quoted at $60 per ton, f.o.b. works.

BLEACHING POWDER—Current demand is active but supply is adequate. Quotations are unchanged. Prices on bleaching powder range at from $2.50 to $3.10 per 100 pounds, in drums, car lots, at works.

CASEIN—OPA maximum prices on processed acid-precipitated casein are as follows: 10,000 pounds or more, 24 cents per pound; 2,000 pounds, 24¼ cents per pound; less than 2,000 pounds, 24¾ cents per pound, f.o.b. shipping point.

CAUSTIC SODA—Demand continues heavy. Market a little less tight. Prices continue unchanged. Solid caustic soda is quoted at $2.30 per 100 pounds; flake and ground is quoted at $2.70 per 100 pounds; all in drums, car lots, at works.

CHINA CLAY—Quotations on china clay are unchanged. Current demand is reported fair. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay is quoted at fom $12 to $22 per ton, at mine. Imported clay is quoted at from $13 to $25 per long ton, ship side.

CHLORINE—Demand and production is reported satisfactory. Quotations are unchanged. Chlorine is currently quoted at $1.75 per 100 pounds, in single unit tank cars, f.o.b. works.

ROSIN—Prices on some grades are higher for the current week. "G" gum rosin is quoted at $5.09 per 100 pounds, in barrels, Savannah. "FF" wood rosin is quoted at $5.09 per 100 pounds, in barrels, New York. Seventy per cent gum rosin size is currently quoted at $5.36 per 100 pounds, f.o.b. works.

SALT CAKE—Prices on salt cake are reported unchanged for the current week. Demand is reported moderate. Domestic salt cake is quoted at $15 per ton, in bulk. Chrome salt cake is quoted at $16 per ton. All prices in car lots, f.o.b. shipping point.

SODA ASH—Heavy demand continues for industrial requirements and market is still tight. Quotations continue unchanged. Current prices, car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Shipments of cash corn are reported larger at this date. This relieves some of the tightness in the industrial supply. Prices unchanged. The pearl grade is quoted at $3.72 per 100 pounds; powdered starch at $3.83 per 100 pounds; all prices in bags, car lots, f.o.b. Chicago.

SULPHATE OF ALUMINA—Demand reported good. Quotations continue unchanged. The commercial grades are quoted at from $1.15 to $1.25 per 100 pounds, in bags, car lots, f.o.b. works. The iron free is quoted at $2.35 per 100 pounds, in bags, at works.

SULPHUR—Quotations on sulphur continue to conform to prevailing market prices. Annual contracts are quoted at $16 per long ton, f.o.b. mines; the price at Gulf Ports is $17.50 per long ton.

TALC—Prices on talc continue unchanged. Demand moderate. Domestic grades are currently quoted at from $16 to $21 per ton, at mines; Canadian at $24 per ton. All prices in car lots.

MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

Paper

(Delivered New York)

Standard News, per ton—

Roll, contract...	*$58.00	@	—
Sheets	66.00	"	—

* OPA Maximum Price.

Kraft—per cwt.—Carload Quantities Zone A, f.o.b. Mill

Superstandard Wrapping	*$5.25	@	—
No. 1 Wrapping...	*5.00	"	—
Standard Wrapping	*4.75	"	—
Standard Bag.....	*4.375	"	—

* OPA Manufacturers' Prices.

Tissues—Per Ream—Carlots

White No. 1.....	1.12½	"	—
White No. 1 M. G.	1.10	"	—
White No. 1½....	1.00	"	—
White No. 2.....	.90	"	—
Anti-Tarnish M.F..	1.20	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—

Toilet—1 M. Sheets—Per Case

Unbleached	4.25	"	—
Bleached	5.70	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet...	5.70	"	—

Paper Towels, Per Case—

Unbleached, Jr....	2.20	"	—
Bleached, Jr.....	3.20	"	—

Manila—per cwt.—C. l. f. a.

No. 1 Jute.....11.25		@	—
No. 1 Manila Wrapping, 35 lb.....	6.00	"	6.25
No. 2 Manila Wrapping, 35 lb.....	5.75	"	6.00

Boards, per ton—

News *48.00		@	—
Chip *48.00		"	—
Sgl. Mla. Ll. Chip*	60.00	"	—
White Pat. Coated*	75.00	"	—
Kraft Liners 50 lb.*	63.00	"	—
Binders Boards....84.00		"	116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5.; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$39.10@$46.00	$40.25@$47.25
100% Rag	32.20 " 37.75	33.35 " 39.25
65% Rag	.... "	29.90 " 35.00
75% Rag	23.00 " 27.00	24.15 " 28.25
65% Rag	.... "	22.80 " 27.75
50% Rag	18.70 " 22.75	19.90 " 24.25
25% Rag	16.40 " 20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds	Ledgers
No. 1..	$10.55@$12.75	$11.70@$14.25
No. 2..	9.65 " 11.75	10.80 " 13.25
No. 3..	9.20 " 11.25	10.35 " 12.50
No. 4..	8.90 " 10.75	10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper. Delivered in Zone 1:

No. 1 Glossy Coated...	$13.65@	$15.50
No. 2 Glossy Coated...	12.40 "	14.00
No. 3 Glossy Coated...	11.60 "	13.25
No. 4 Glossy Coated...	11.15 "	12.75
No. 1 Antique (watermarked)	10.25 "	11.75
No. 2 Offset.....	9.60 "	11.00
A Grade E. F.....	9.35 "	10.75
A Grade S. & S. C....	9.60 "	11.00
B Grade E. F.....	8.85 "	10.25
B Grade S. & S. C....	9.10 "	10.50
C Grade E. F.....	8.55 "	9.75
C Grade S. & S. C....	8.80 "	10.00
D Grade E. F.....	8.25 "	9.50
D Grade S. & S. C....	8.50 "	9.75

Ivory & India at $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers Prices, Less Freight, Not Exceeding OPA Allowances.

Bl. Softwood Sulphite.....	$86.00
Unbl. Softwood Sulphite.....	74.00
Bl. Hardwood Sulphite.....	83.50
Unbl. Hardwood Sulphite.....	71.50
Bl. Mitscherlich	81.00
Unbl. Mitscherlich ... 72.00 @	82.00
N. Bleached Sulphate.....	86.00
S. Bleached Sulphate.....	79.00
N. Semi-Bleached Sulphate...	82.00
S. Semi-Bleached Sulphate....	75.00
N. Unbl. Sulphate.....	73.00
S. Unbl. Sulphate.....	63.50
Bl. Soda	72.00
Unbl. Soda	68.00
Groundwood	50.00

Transportation Allowances Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$13.50
Lake Central	13.50
Southern	16.00
West Coast (in area).....	10.50
West Coast (out area).....	16.50

	50%-80% Air Dry Weight
Northeast	$11.50
Lake Central	11.50
Southern	14.00
West Coast (in area).....	9.50
West Coast (out area).....	15.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$8.50
Lake Central	8.50
Southern	11.00
West Coast (in area).....	7.50
West Coast (out area).....	13.50

Should freight charges actually exceed these allowances, the difference may be added to the maximum prices

Domestic Rags

New Rags (Prices to Mill f. o. b. N. Y.)

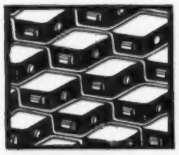
Shirt Cuttings—			
New White, No. 1..	6.50	@	7.25*
Silesias No. 1.....	—	"	5.75*
New Unbleached...	6.75	"	7.50*
Blue Overall.....	—	"	5.50*
Fancy	—	"	3.50*
Washables	—	"	3.00*
Bleached Khaki Cuttings	—	"	4.25*
Unbleached Khaki Cuttings	—	"	3.50*

* OPA Maximum Prices.

PAPER MILL EMPLOYEES HAVE
SAFEST FOOTING ON
KLEMP
HEXTEEL

Trucks travel *securely*, accidents are *avoided*, production is *speeded* on this heavy solidly linked mesh, imbedded in concrete or mastic. Proof against impact, humidity, alternate wetting and drying, etc. A lifetime level!

KLEMP HEXTEEL
HEAVY DUTY SURFACE ARMOR



Easily, quickly laid over concrete or wooden floors, *old* or *new*. Use also for repairs of depressions, potholes, danger spots.

● *SEND FOR COMPLETE KLEMP CATALOG*

Steel Flooring for all duties, Stair Treads, Steel Safety Mats. Wire or write

Special Representative, C. P. Robinson, 420 Lexington Ave., New York, N. Y.

WM. F. KLEMP CO. "Steel Flooring Specialists"
6617 S. Melvina Ave. Chicago 38, Illinois

SCREENS
for PAPER
and PULP
MILLS

PERFORMANCE of your Centrifugals, Shakers and Drainers definitely improved by the use of precision screens built to your specifications. Let us "sit in" on your screening problems.

The Harrington & King PERFORATING Co.

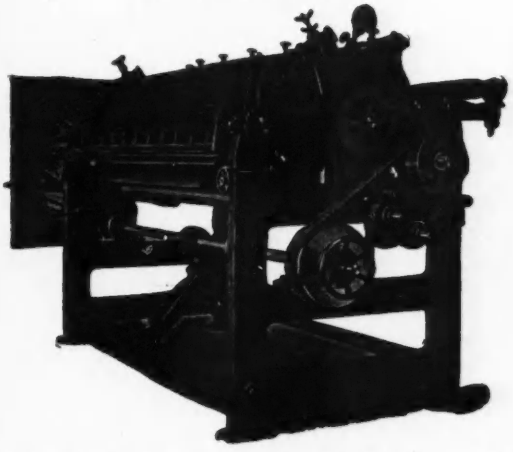
5652 Fillmore St., Chicago 44, Ill.—114 Liberty St., New York 6, N. Y.

PRICE & PIERCE »»»»»»»ltd•

Wood Pulp &
Paper Agents

60 East 42 Street
New York. N. Y.

MODEL 28
ROLLER BEARING CUTTER



HAMBLET MACHINE CO.
LAWRENCE, MASS.

MAKERS OF
SINGLE, DUPLEX AND DIAGONAL PAPER CUTTERS
CUTTER KNIVES, PATENT TOP SLITTERS.

Old Rags

White, No. 1—		
Repacked	*3.80	—
Miscellaneous	*3.20	—
White, No. 2—		
Repacked	*2.90	—
Miscellaneous	*2.65	—
Third and Blues—		
Repacked	*2.20	—
Miscellaneous	*1.80	—
Roofing Rags—		
No. 1	*1.55	—
No. 2	*1.45	—
No. 3 (bagging)	*1.35	—
No. 4	*1.35	—
No. 5A	*1.35	—
Old Manila Rope	5.75	—

OPA Maximum Prices.

Foreign Rags

All Prices nominal

New Rags

New Dark Cuttings	2.25	2.40
New Mixed Cuttings	2.00	2.20
New Light Silesias	5.50	5.75
Light Flannelettes	5.50	5.75
New White Cuttings	7.00	7.50
New Light Oxfords	4.00	4.50
New Light Prints	3.00	3.25

Old Rags

No. 1 White Linens	7.50	8.50
No. 2 White Linens	6.50	7.50
No. 3 White Linens	4.50	—
No. 4 White Linens	2.25	3.25
No. 1 White Cotton	4.25	4.75
No. 2 White Cotton	3.25	3.75
No. 3 White Cotton	2.50	3.00
No. 4 White Cotton	1.90	2.20
Extra Light Prints	2.00	2.40
Ord. Light Prints	1.75	2.15
Med. Light Prints	1.55	1.95
Dutch Blue Cottons	2.25	2.50
French Blue Linens	3.00	—
Checks and Blues	2.00	—
Linsey Garments	1.90	2.00
Dark Cottons	1.50	1.60
Old Shopperies	1.30	1.45
New Shopperies	1.45	1.50
French Blues	2.25	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—		
Foreign	Nominal	
Domestic	4.25	4.35
Wool Tares, light	4.25	4.50
Wool Tares heavy	4.50	5.00
Bright Bagging	4.50	4.85
Manila Rope—		
Foreign	—	—
Domestic	*5.75	—
Jute Threads	5.50	—
No. 1 Sisal Strings	*4.00	—
Mixed Strings	2.00	—

*OPA Maximum Price.

Old Waste Papers

(F. o. b. New York)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	—
No. 1 Hard White Envelope Cuts	3.12½	—
No. 1 Hard White Shavings, unruled	2.87½	—
No. 1 Hard White Shavings, ruled	2.50	—
Soft White Shavings, one cut	2.87½	—
No. 1 Soft White Shavings	2.50	—
Soft White Shavings, Misc.	2.15	—
No. 1 Fly Leaf Shavings	1.67½	—
No. 2 Fly Leaf Shavings	1.12½	—
No. 1 Groundwood Fly Leaf Shavings	1.25	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	—
Mixed Colored Shavings	.75	—
Mixed Groundwood Colored Shavings	.90	—
Overissue Magazines	1.67½	—
No. 1 Heavy Books & Magazines	1.67½	—
Mixed Books	.85	—
No. 1 White Ledger	2.17½	—
No. 2 Mixed Ledger, colored	1.87½	—
New Manila Envelope Cuttings, one cut	2.87½	—
New Manila Envelope Cuttings	2.65	—
Extra Manilas	1.85	—
Mixed Kraft, Env. & Bag Cuttings	2.75	—
Kraft Envelope Cuttings	3.25	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	—
New 100% Kraft Corrugated Cuttings	2.25	—
No. 1 Assorted Old Kraft	1.75	—
New Jute Corrugated Cuttings	.90	—
Old 100% Kraft Corrugated Containers	1.75	—
Old Corrugated Containers	1.15	—
Box Board Cuttings	.72½	—
White Blank News	1.65	—
Overissue News	.85	—
No. 1 News	.75	—
No. 1 Mixed Paper	.70	—
Old Corrugated Containers	.82½	—
Mill Wrappers	.85	—

Twines

All Prices Nominal

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—		
India	.21	—
White Hemp	.21	—
Fine Polished—		
Fine India	.26	—
Unpolished—		
Box	17½	—
Paper Makers	.17	—
Tube Rope	.19	—
Wall Paper	.20½	—
Wrapping	.23	—
Soft Fiber Rope	.19	—
Cotton	.25	—

(Hard Fiber)

Medium Java	.18	—
Mex. Sisal	.16	—
Manila		—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill.)

Shirt Cuttings—	
New White No. 1	.07¼
New White No. 2	.05¾
Light Silesias	.05¾
Black Silesias, soft	.03¾
New Unbleached	.07½
Washable Prints	.04¼
Washable No. 1	.03
Blue Overall	.05½
Cottons—According to grades—	
Washable shredding	.01¾
Fancy Percales	.04¾
New Black Soft	.03¼
Khaki Cuttings—	
Unbleachable Cotton Cuttings	.03½
Bleachable Cotton Cuttings	.04¼
Men's Corduroy	.03½
Ladies' Corduroy	.03
Cottonades	.03¼

Domestic Rags (Old)

White No. 1—Repacked	3.80	—
Miscellaneous No. 1	3.20	—
Miscellaneous No. 2	2.65	—
White No. 2—Repacked	2.90	—
Thirds and Blues—		
Miscellaneous	1.80	—
Repacked	2.20	—
Black Stockings—		
(Export)	Nominal	
Roofing Stock—		
Foreign No. 1	Nominal	
Domestic No. 1	1.55	—
Domestic No. 2	1.45	—
Roofing Bagging	1.35	—
Old Manila Rope	5.75	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—		
Foreign	Nominal	
Domestic	3.00	3.50
No. 1 Clean bright—		
Sisal Strings	.04	
No. 2 Clean bright—		
Sisal Strings	.03	
Sisal Jute	.02½	.02¾
Scrap—		
No. 1	3.25	3.50
No. 2	1.75	1.80
Wool Tares	4.00	4.25
No. 1 New Light Burlap	3.00	4.00
New Burlap Cuttings	3.75	4.00

Old Papers

(F. o. b. Phila)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	—
No. 1 Hard White Shavings, unruled	2.87½	—
Soft White Shavings, one cut	2.50	—
White Blank News	1.65	—
Soft White Shavings		
Misc.	2.15	—
No. 1 White Ledger	2.17½	—
No. 2 Ledger, colored	1.87½	—
No. 1 Heavy Books & Magazines	1.67½	—
Overissue Magazines	1.67½	—
New Manila Envelope Cuttings	2.65	—
No. 1 Assorted Old Kraft	1.75	—
No. 1 Mixed Paper	.70	—
Box Board Cuttings	.72½	—
Kraft Corrugated Cuttings	2.25	—
Old Corrugated Containers	1.15	—
Overissue News	.85	—
No. 1 News	1.00	—

BOSTON

Old Papers

(F. o. b. Boston)

OPA Maximum Prices

No. 1 Hard White Shavings, unruled	2.87½	—
No. 1 Hard White Shavings, ruled	2.50	—
Soft White Shavings, Misc.	2.15	—
No. 1 Fly Leaf Shavings	1.67½	—
No. 2 Fly Leaf Shavings	1.12½	—
No. 1 Groundwood Fly Leaf Shavings	1.25	—
No. 2 Groundwood Fly Leaf Shavings	.90	—
Mixed Colored Shavings	.75	—
New Manila Envelope Cuts, one cut	2.87½	—
Hard White Envelope Cuts, one cut	3.37½	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	—
Mixed Kraft Env. & Bag Cuttings	2.75	—
Kraft Envelope Cuttings	3.25	—
No. 1 Heavy Books & Magazines	1.67½	—
New Manila Envelope Cuts, one cut	2.87½	—
New Manila Envelope Cuttings	2.65	—
White Blank News	1.65	—
No. 1 Assorted Old Kraft	1.75	—
No. 1 Mixed Paper	.70	—
Overissue News	.85	—
Box Board Cuttings	.72½	—
New Corrugated Cuttings, Kraft	2.25	—
Old 100% Kraft Corrugated Containers	1.75	—
Old Corrugated Containers	1.15	—
Jute Corrugated Cuttings	1.07½	—

Bagging

(F. o. b. Boston)

Gunny Bagging—		
Foreign	(nominal)	
Domestic	— @	2.75
Sisal Rope No. 1	*4.75	—
Sisal Rope No. 2	*4.25	—
Mixed Rope	—	1.55
Transmission Rope—		
Foreign	(nominal)	
Domestic	2.75	3.00
Manila Rope—		
Foreign	(nominal)	
Domestic	5.75	—
Soft Jute Rope	5.25	—
Jute Cut Threads	3.00	3.50
Bleachery Burlap	8.50	9.00
Scrap Burlap—		
Foreign	(nominal)	
Domestic	—	2.50
South American	—	3.00
Wool Tares—		
Foreign	(nominal)	
Domestic	4.25	
Aust. Wool Pouches	—	3.25
New Zealand Wool Pouches	—	3.50
New Burlap Cuttings	4.75	
Heavy Baling Bagging	4.00	4.25
Paper Mill Bagging	2.50	3.00
No. 2 Roofing Bagging	1.35	—

*OPA Maximum Price.

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—		
New Light Prints	.04½	.04¾
Fancy Percales	.04¼	.04½
New White No. 1	.06¾	.07
New Light Flannelettes	.05¾	.06
Canton Flannels, Bleached	.06	.06½
Underwear Cutters, Bleached	.06¼	.06½
Underwear Cutters, Unbleached	.05¼	.06
Silesias No. 1	.06	.06½
New Black Silesias	.03	.03½
Red Cotton Cuttings	.03½	.04
Soft Unbleached	.06½	.06¾
Blue Cheviots	.05½	.06
Fancy	.02¼	—
Washable	.02¼	—
Khaki Cuttings	.02¼	.03
O. D. Khaki	.03½	.03¾
Corduroy	.03¼	.03¾
New Canvas	.06¼	.06¾
B. V. D. Cuttings	.06¼	.06¾

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—Repacked	3.80	—
Miscellaneous	3.20	—
White No. 2—Miscellaneous	2.65	—
Twos and Blues, Repacked	2.20	—
Old Blue Overalls	2.25	2.50
Thirds and Blues, Repacked	2.20	—
Miscellaneous	1.80	—
Black Stockings	3.50	4.00
Roofing Stock—		
No. 1	1.55	—
No. 2	1.45	—
No. 3	1.35	—
No. 4	1.35	—
No. 5, Quality A	1.35	—
Quality B	1.20	—
Quality C	.95	—
Old Manila Rope	5.75	—

*OPA Maximum Prices

Foreign Rags

(F. o. b Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)

OPA Maximum Prices

Shavings—		
No. 1 Hard White Envelope Cuts, one cut	1.37½	—
No. 1 Hard White Shavings, unruled	2.87½	—
No. 1 Soft White Shavings	2.50	—
No. 1 White Ledger	2.17½	—
No. 1 Heavy Books & Magazines	1.67½	—
White Blank News	1.65	—
Mixed Kraft Env. & Bag Cuttings	2.75	—
No. 1 Assorted Old Kraft	1.75	—
Overissue News	.85	—
No. 1 News	.75	—
No. 1 Mixed Paper	.70	—
No. 1 Roofing Rags	1.55	—
No. 1 Roofing Bags	1.45	—